

**Trinity River Channel Rehabilitation Sites: Bucktail
(River Mile 105.3-106.35) and Lower Junction City (River Mile 78.8-79.8)**

**Final Environmental Assessment/Initial Study
DOI-BLM CA-N060-2014-014-EA and TR-EA0114**

April 2014

This document has been split into six parts to reduce the size of the document for distribution via the internet.

This is Part 5 of 6

A Table of Contents for the entire document is located at the beginning of Part 1.

- Part 1: Document cover through Section 3.5: Water Quality (cover to page 78)**
- Part 2: Section 3.6: Fisheries through Section 6: References (page 78 to page 192)**
- Part 3: Appendix A: Mitigation Monitoring and Reporting Program**
- Part 4: Appendix B: Response to Comments part 1 (page B-1 to B-57)**
- Part 5: Appendix B: Response to Comments part 1 (page B-58 to end)**
- Part 6: Appendix C: Northwest Forest Plan Compliance Checklist**

Comment Letter 23



MICHAEL CARANCI

TRINITY RIVER OUTFITTERS

KRISTI BEVARD

GOLD COAST GUIDE AND SHUTTLE SERVICE

CLARK TUTHILL

TRINITY RIVER ADVENTURES

SWEET TRINITY GUIDE SERVICE

STEVE'S TRINITY GUIDE SERVICE

TIGER T'S GUIDE SERVICE

January 13, 2014

Matt St. John, Executive Officer
North Coast Regional Water
Quality Control Board
5550 Skylane Blvd, Suite A
Santa Rosa, CA 95403-1072

Michelle Gallagher
Trinity River Restoration Program
PO Box 1300
Weaverville, CA 96093

E-mail to: Matt.St.John@waterboards.ca.gov and magallagher@usbr.gov

**Subject: Comments on Trinity River Channel Rehabilitation Sites: Bucktail (River Mile 105.3-106.35) and Lower Junction City (River Mile 78.8-79.8.)
Draft Environmental Assessment/Initial Study; DOI-BLM CA-N060-2014-014-EA and TR-EA0114**

Dear Mr. St. John and Ms. Gallagher;

This letter is submitted on behalf several organizations and individuals who are familiar with and use the Trinity River and its waters. We include commercial salmon fishermen and Trinity River fishing guides who make their living on the Trinity River.

Our finding and recommendation is that the environmental document for the Bucktail and Lower Junction City Trinity River mainstem rehabilitation projects is inadequate and that an Environmental Impact Statement/Environmental Impact Report (EIS/EIR) should be prepared.

The environmental documentation for Trinity River Record of Decision (ROD) does not provide adequate coverage under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) for the substantial deviation that has been made in implementing the Trinity ROD. The proposed projects represent a change in design philosophy that was not contemplated in the Trinity ROD. Other measures contained in the Trinity ROD such as watershed restoration have been arbitrarily limited and have not been carried out as envisioned. A new or supplemental EIS/EIR is required to analyze alternatives and realistically evaluate costs, benefits, impacts and mitigation for the proposed Bucktail and Lower Junction City projects. The EIS/EIR must analyze alternatives to mainstem juvenile salmonid habitat creation such as full implementation of the watershed component of the Trinity ROD and tributary habitat restoration.

A

Our recommendation to prepare an EIS/EIR is for the following reasons:

- ❖ The Draft Phase 1 Report by the Trinity River Restoration Program's (TRRP) Science Advisory Board (SAB) has found that *"increases in juvenile rearing habitat were not statistically significant"* from channel rehabilitation projects and that the TRRP's *"formal scientific hypothesis testing is frequently lacking"*. The rosy findings and justifications for these projects in the Draft EA/Initial Study are not supported by substantial evidence and are in sharp contrast to the findings of the SAB's Draft report.
- ❖ Our collective observation is that impacts of the mainstem projects have been greater than anticipated, but without the promised benefits. Project impacts include increased

B

C

- river turbidity, reduced public access, reduced adult salmonid holding habitat, filling of pools, impairment of river navigation, spreading of noxious weeds, noise, truck traffic and damage to agricultural water supplies. Mitigation measures have not been adequate to reduce the numerous significant impacts to less than significant. } C
- ❖ No more than three side channels were considered in the 2000 Trinity River Mainstem Fishery Restoration EIS and Trinity ROD but many more than that have been built. Engineered logjams were not considered or evaluated in the Master EIR or the 2000 EIS. The channel rehabilitation approach being used is not what was approved in the Trinity ROD. The projects are larger in size and complexity, with a much larger footprint and greater impact than the ROD and 2000 EIS previously envisioned. } D
 - ❖ The Bucktail Bridge located in the middle of the proposed Bucktail Project is at risk of failure and in need of replacement due to Trinity ROD flows. Replacement of the Bucktail Bridge is unfunded. The analysis fails to consider construction sequencing and the hydrologic interaction of the two projects. Logic tells us that the bridge should be replaced before any rehabilitation project is constructed at that location. A new bridge may completely change the river's dynamics at that location. Shouldn't a new Bucktail Bridge come first so that a safe and functional bridge for people would be built before designing additional rehabilitation projects? } E
 - ❖ The TRRP is failing to create significant new juvenile salmonid rearing habitat and meet adult fishery restoration goals. Despite predictions of a banner year for fall Chinook salmon, the Trinity River had some of the lowest recorded numbers of natural spawners, as well as some of the poorest adult returns in the entire Klamath-Trinity basin. According to the SAB report, *"In most cases the increases in juvenile rearing habitat were not statistically significant in term of absolute changes in habitat area."* } F
 - ❖ Watershed restoration and tributary restoration have not been considered as alternatives to mainstem rehabilitation projects and must be considered in a new or supplemental EIS/EIR. Watershed and tributary restoration projects would fulfill the overall goal of restoring Trinity River fishery populations to levels that existed prior to construction of the Trinity River Division (TRD) of the Central Valley Project (CVP) by creating and improving existing juvenile salmonid rearing habitat. Despite repeated recommendations from the public and the Trinity Adaptive Management Working Group (TAMWG), the watershed restoration component of the Trinity ROD has been arbitrarily limited in scope and grossly underfunded. The TRRP's lack of emphasis on fully implementing the watershed component of the Trinity ROD significantly undermines the 2004 decision of the Ninth Circuit Court of Appeals when it overturned a lower court decision to halt the ROD, and allowed the Trinity ROD to proceed. } G

For these reasons and more in the attached specific comments on the Draft EA/IS, we oppose approval of these projects until an EIS/EIR has been prepared following completion of the Science Advisory Board's Phase 1 review **and** there have been at least two annual releases from Lewiston Dam of 10,000 cfs or more. The benefits of these very expensive and disruptive projects must be clearly demonstrated before more additional money is spent on them. Important work need not stop because the Bucktail and Lower Junction City projects do not move forward at this time. We support replacement of the Bucktail Bridge and an accelerated watershed restoration program as high priority projects with broad public support that fit within the existing Trinity River Restoration Program framework. } H

The appropriate course of action for the TRRP is as follows:

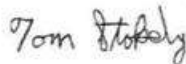
1. Replace the Bucktail Bridge
2. Implement extensive watershed restoration throughout the Trinity River Basin as envisioned in the Trinity ROD.
3. Complete the SAB's Phase 1 Report
4. Develop an unbiased Decision Support System upon which to base restoration actions
5. Implement an unbiased Adaptive Management Program to look at what has been done, what has been achieved, and where to go from here to meet the fishery restoration goals of the Trinity River Restoration Program.
6. Experience at least annual two Lewiston Dam releases of 10,000 cfs or more before funding additional projects after a supplemental EIS/EIR has been prepared.

We look forward to working with you to ensure that the Trinity River's fisheries are restored to a level that *"is to be measured not only by returning adult anadromous fish spawners, but by the ability of dependent tribal, commercial, and sport fisheries to participate fully, through enhanced in-river and ocean harvest opportunities, in the benefits of restoration."*¹

Sincerely,




Carolee Krieger
California Water Impact Network
808 Romero Canyon Road
Santa Barbara, CA 93108



Tom Stokely
California Water Impact Network
201 Terry Lynn Ave.
Mt. Shasta, CA 96067

Steve Townsend, President
Trinity River Guides Association and
Owner Steve's Trinity Guide Service
P.O. Box 164
Junction City, CA 96048



Zeke Grader, Executive Director
Pacific Coast Federation of Fishermen's Assn's
P.O. Box 29370
San Francisco, CA 94129-0370



Bill Jennings, Executive Director
California Sportfishing Protection Alliance
3536 Rainier Ave.
Stockton, CA 95204



Barbara Vlamis, Executive Director
AquAlliance
P.O. Box 4024
Chico, CA 95927

¹ Public Law 104-143, Section 2(2); accessed at <http://www.gpo.gov/fdsys/pkg/PLAW-104publ143/html/PLAW-104publ143.htm>

Larry Glass, President
Safe Alternatives for our Forest Environment
And Northcoast Environmental Center
P.O. Box 1510 and 1385 8th St., Ste 215
Hayfork, CA 96041 Arcata, CA 95518



Nick DiCroce, Co-facilitator
California Environmental Water Caucus
2179 Holly Lane
Solvang, CA 93463

Kelli Gant, President
Trinity Lake Revitalization Alliance
P.O. Box 128
Trinity Center, CA 96091

Michael Caranci
Michael@theflyshop.com

Liam Gogan, Owner
Trinity River Outfitters
P.O. Box 554
Douglas City, CA 96024

Bill Dickens, Owner
Gold Coast Guide and Shuttle Service
P.O. Box 2445
Weaverville, CA 96093

Scott Stratton, Owner
Trinity River Adventures
361 Ponderosa Pines Rd.
Lewiston, CA 96052

Todd LeBoeuf, Owner
Tiger T's Guide Service
2030 Marlene Court
Redding, CA 96002



Gary Graham Hughes, Executive Director
Environmental Protection Information Ctr.
145 G St, Suite A
Arcata, CA 95521



Scott Greacen, Executive Director
Friends of the Eel River
P.O. Box 4945
Arcata, CA 95518-4945

Robyn DiFalco, Executive Director
Butte Environmental Council
116 W. 2nd St., Suite 3
Chico, CA 95928

Herb Burton, Owner
Trinity Fly Shop
Lewiston, CA 96052

Kristi Bevard
Salt Flat Landowner
kbevard@gmail.com

Clark Tuthill
Poker Bar Property Owner
810 Reo Lane, Poker Bar
cltuts@att.net

Travis Michel, Owner
Sweet Trinity Guide Service
P.O. Box 1301 Weaverville, CA 96093

**SPECIFIC COMMENTS ON DRAFT EA/IS FOR BUCKTAIL AND LOWER JUNCTION CITY
CHANNEL REHABILITATION PROJECTS**

**A BREAK IN MAINSTEM CHANNEL REHABILITATION PROJECTS WOULD BE CONSISTENT
WITH THE TRINITY ROD- DON'T CUT AND RUN!**

The ROD calls for a study period after Phase I review, and the Phase I Review clearly shows that a break in construction of these projects is appropriate, as was originally suggested in the Implementation plan for the Trinity ROD, page C-8, Appendix C:

"An interim period without construction activities may be necessary to fully evaluate the effectiveness of project designs and the effect of the new flow regime before beginning construction on the remaining sites."

K

The problem that exists is that the TRRP will not consider the fact that the work they have been so efficiently completing may not restore the fishery as envisioned. The TRRP also believes that priority projects such as replacement of the Bucktail Bridge are somebody else's responsibility and essentially don't exist. Reclamation, as lead agency for the Trinity River Restoration Program, believes that once the mainstem channel rehabilitation projects are done, that no other work remains to be done. Reclamation's arbitrary exclusion of watershed restoration downstream of the North Fork reveals their attitude that they intend to cut and run once the mainstem projects are completed, regardless of the results to meet the goal of restoring Trinity River fish and fisheries for all to share in the benefits.

**THE DRAFT PHASE 1 REPORT DOES NOT SUBSTANTIATE CLAIMS OF SIGNIFICANT
BENEFITS FROM THESE PROJECTS**

The Trinity River Restoration Program's (TRRP) Science Advisory Board (SAB) has Completed a DRAFT Phase 1 report on the Trinity River Mainstem Channel Rehabilitation projects completed so far. While the report is still a draft, it is disingenuous to release a draft Environmental Assessment/Initial Study (EA/IS) for public comment and review while the SAB's report is under internal review and embargoed for public release.

L

The SAB's draft report hit the nail on the head by identifying that the restoration approach now being used is not what was envisioned in the Trinity ROD:

"The intent of these larger projects was, in part, to create immediate habitat and to construct large-scale channel features that would interact with flood flows and drive more rapid channel changes. This change in design philosophy was not based on any formal adaptive management analyses and represented a shift from the foundational notion that a dynamic river could be created with minimal bank reconstruction (HVT et al. 2011)." Page 3

Some of the key findings of the SAB Draft Phase 1 Report are as follows:

- *"The initial rehabilitation projects produced little to no immediate geomorphic response."*
Page 3

- *"Despite the program's recognition of geomorphic context in the design process, it hasn't been considered in any systematic way by evaluating physical and biological response to restoration actions."*
- *Why after 7 years of work can this not be accomplished?*
- *"ROD flows are capable of eroding riparian berms and may not require mechanical intervention as originally thought." Page 10*
- *"In most cases the increases in juvenile rearing habitat were not statistically significant in term of absolute changes in habitat area..." page 16*
- *"System scale monitoring shows that juvenile rearing habitat availability at base flow has not changed significantly over the three year sampling period." Page 21*
- *"Most of the available Juvenile habitat is located in the Lewiston reach which for unknown reasons exhibited a decline in mean habitat availability during the three year sampling period." Page 22*
- *"Juvenile salmonid rearing habitat availability has increased since 2001 but the rate of increase is slow (1.2% -1.6% per year at base flows)." Page 22*
- *The goal is a minimum of a 400% increase in juvenile salmonid rearing habitat. Page 15, Table 3*
- *"The program is implementing the ROD, constructing habitat and monitoring physical and biological response relative to objectives but integration of these efforts is weak, particularly with regard to the program primary objective of fish production." Page 27*
- *"We also note that formal scientific hypothesis testing is frequently lacking in Program activities." "...the program requires stronger use of hypothesis testing for justifying study plans, making defensible decisions and conveying results to peers and the public." Page 28*
- *"To address the above issues, our primary recommendation is that the Program develop a Decisions Support System (DSS)." Page 29*

Many of the findings in the Phase 1 report sharply contradict the findings in the Draft EA/IS. For instance, fish passage from equipment river crossings is considered a significant impact, but is justified based on an unsubstantiated claim that improved physical salmonid rearing habitat will make up for it:

"While long-term beneficial changes to physical rearing habitat associated with implementing the Proposed Project are anticipated to offset the temporary impacts on fish passage, the temporary impacts on fish passage would be considered significant." (p 110)

Similar justification for significant impacts to salmonids based on unproven future improvements to salmonid rearing habitat are made for the following significant impacts (Section 3.6.2.3):

- effects on potential spawning and rearing habitat for anadromous fishes, including the federally and state-listed Coho salmon.
- increased erosion and sedimentation that could adversely affect fishes, including the federally and state-listed Coho salmon
- the accidental spill of hazardous materials that could adversely affect fishes, including the federally and state-listed Coho salmon.
- the mortality of rearing fishes, including the federally and state-listed Coho salmon.

- permanent and temporary loss of SRA habitat for anadromous salmonids.

However, according to the SAB's Draft Phase 1 report, the improvements in salmonid rearing habitat are not yet evident from these projects. Therefore, short term significant impacts cannot be justified based on improved future conditions from the mainstem channel rehabilitation projects.

SIGNIFICANT UNMITIGATED IMPACTS HAVE RESULTED FROM PAST PROJECTS, WITHOUT COMMENSURATE BENEFITS

Our collective observation is that impacts of the mainstem projects have been greater than anticipated, but without the promised benefits. Project impacts include increased river turbidity, reduced public access, reduced adult salmonid holding habitat, filling of pools, impairment of river navigation, spreading of noxious weeds, noise, truck traffic and damage to agricultural water supplies. Mitigation measures have not been adequate to reduce the numerous significant impacts to less than significant and we believe this is the case for the proposed projects.

The Draft EA/IS admits numerous significant impacts, but claims that they are all either mitigated to less than significant levels, or that the short term impacts of the projects are negated by the alleged long term benefits of the projects.

A serious shortcoming with the Draft EA/IS is that there is not a summary of significant environmental impacts.

If there were a summary of significant impacts identified in the environmental it would include the following 25 significant impacts:

- 1) Impact 3.3-2. Construction activities associated with the Proposed Project could result in increased erosion and short-term sedimentation of the Trinity River.
- 2) Impact 3.5-1. Construction of the project could result in short-term, temporary increases in turbidity and total suspended solids levels during construction.
- 3) Impact 3.5-2. Construction of the project could result in short-term, temporary increases in turbidity and total suspended solids levels following construction.
- 4) Impact 3.5-3. Construction of the project could cause contamination of the Trinity River from hazardous materials spills.
- 5) Impact 3.5-5. Construction and maintenance of the project could result in the degradation of Trinity River beneficial uses identified in the Basin Plan.
- 6) Impact 3.6-1. Implementation of the project could result in effects on potential spawning and rearing habitat for anadromous fishes, including the federally and state-listed Coho salmon.

M

- 7) Impact 3.6-2. Implementation of the project could result in increased erosion and sedimentation that could adversely affect fishes, including the federally and state-listed Coho salmon.
- 8) Impact 3.6-3. Construction activities associated with the project could potentially result in the accidental spill of hazardous materials that could adversely affect fishes, including the federally and state-listed Coho salmon.
- 9) Impact 3.7-1. Construction activities associated with the project could result in the loss of jurisdictional waters including wetlands.
- 10) Impact 3.7-4. Construction activities associated with the project could result in impacts to the state-listed little willow flycatcher.
- 11) Impact 3.7-5. Construction activities associated with the project could result in impacts to foothill yellow-legged frog.
- 12) Impact 3.7-6. Construction activities associated with the project could result in impacts to western pond turtle.
- 13) Impact 3.7-7. Construction activities associated with the project could result in impacts to nesting Vaux's swift, California yellow warbler, and yellow-breasted chat.
- 14) Impact 3.7-8. Construction activities associated with the project could result in impacts to nesting bald eagle and northern goshawk.
- 15) Impact 3.7-9. Construction activities associated with the project could result in impacts to special status bats and the ring-tailed cat.
- 16) Impact 3.7-13. Implementation of the project could result in the spread of non-native and invasive plant species.
- 17) Impact 3.8-1. Construction associated with the project could disrupt recreation activities, such as boating, fishing, and swimming, in the Trinity River.
- 18) Impact 3.8-2. Construction of the project could result in an increased safety risk to recreational users or resource damage to recreational lands within the project boundaries.
- 19) Impact 3.8-3. Construction activities associated with the project could lower the Trinity River's aesthetic value for recreationists by increasing its turbidity.
- 20) Impact 3.12-1. Implementation of the project could result in the degradation and/or obstruction of a scenic view from key observation areas.
- 21) Impact 3.14-1. Construction activities associated with the proposed project would result in noise impacts to nearby sensitive receptors.

M

22) Impact 3.15-3. Implementation of the project could result in disruption to emergency services, school bus routes, or student travel routes during construction activities.

23) 3.16-2. Construction activities would generate short-term increases in vehicle trips.

24) 3.16-4. Construction activities would increase wear and tear on local roadways.

25) 3.16-5. Construction activities could pose a safety hazard to motorists, bicyclists, pedestrians, and equestrians.

This is a very large number of significant impacts. Mitigation measures have not always been effective and we wonder how it can be worth the risk of continued significant impacts with commensurate benefits realized from the projects. The Draft EA/IS also claims that there are no significant cumulative impacts. We disagree and give the examples below.

M

Reduced Public Access

The proposed project at Bucktail would eliminate significant public access to the Trinity River during the construction period and also proposes to replace the existing public access boat launching area upstream of Bucktail Bridge to downstream of the bridge on private lands. The Bucktail Property Owners' Association opposes this change. Therefore, there would be a net loss of public access under the proposed project. This would also conflict with the Trinity County General Plan policies to not decrease the existing number of public access points along the Trinity River. Other mainstem channel rehabilitation projects have resulted in closing public access through installation of gates paid for by the TRRP on public and private lands. This project would further exacerbate cumulative impacts to public access points by reducing public access to a Wild and Scenic River. Even a temporary reduction in access is significant because places to put in boats are limited along the Trinity River.

N

Navigational Impacts

Whenever a side channel is constructed in the Trinity River, or the river is widened, it reduces the depth of water over gravel bars and other underwater obstructions, particularly at winter base flows of 300 cfs. Fishermen have complained that they have to drag boats over gravel bars at low flows. Some of those gravel bars may contain salmon redds, including those of the threatened Coho salmon. This impact has not been clearly identified or mitigated. For instance a reasonable mitigation measure would be to increase winter base flows to improve navigation and decrease potential impacts to salmon and steelhead redds from trampling and dewatering.

O

Noise and Truck Traffic and Damage Noise, truck traffic, greenhouse gases and damage to agricultural water systems are known impacts of past projects. The noise, truck traffic and greenhouse gas impacts are disclosed, but again dismissed as insignificant or worth it because

P

of the long-term environmental benefits of the proposed projects, which is not supported by the evidence provided by the SAB's Draft Phase 1 report.

Are these projects worth the impacts they cause? Thus far, the record does not indicate that there are substantial benefits worth the short-term impacts.

Turbidity

As evidenced by the comment letters on this project by Clark Tuthill and Bill West, attached and incorporated herein by reference, turbidity has significant negative impacts for other beneficial uses such as fishing. Based on past projects the document falsely claims that mitigation measures for turbidity will reduce impacts to less than significant levels.

The Water Quality Control Plan for the North Coast Region (Basin Plan) clearly states that background turbidity should not increase more than 20% above background levels, nor in a manner that would impact other beneficial uses of water. Based on the evidence from Mr. Tuthill, significant impacts to recreational fishing have not been adequately mitigated and turbidity levels have clearly exceeded Basin Plan water quality objectives.

The Draft EA/IS identifies significant turbidity related impacts to recreation in Table 14 on page 139 as follows:

- disrupt recreation activities, such as boating, fishing, and swimming, in the Trinity River.
- an increased safety risk to recreational users or resource damage to recreational lands within the project boundaries.
- lower the Trinity River's aesthetic value for recreationists by increasing its turbidity.

The project is not considered to have a significant negative impact to the Wild and Scenic values of the Trinity, even though the Draft EA/IS admits that *"the Proposed Project would have a temporary effect on the scenic and recreational components of the Trinity River's Wild and Scenic River Values"* (page 142) but again justifies and does not consider the impacts significant because *"Project activities would be temporary and ultimately enhance the "natural" qualities of the river."* Clearly the justification for the finding of insignificant impacts is flawed in that past projects have not enhanced the fishery or natural qualities of the river.

For instance, would a clearcut on a Wild and Scenic River be considered an enhancement of the natural recreational and visual qualities of the river? The promotional postcard below for the Lowden Ranch project gives the impression of a clearcut on the Trinity River, complete with log stumps at the water's edge. A finding of overriding considerations is necessary to justify the significant negative impacts to the Trinity River's recreational and Wild and Scenic features, yet no long-term benefit can be shown at this time to justify such a finding at this time.

Q



www.trrp.net

Lowden Ranch Rehabilitation Project – November 2010,
Lowiston, CA. Newly constructed wood jam and floodplain
area along the Trinity River.

place
stamp
here

Noxious Weeds

The Draft EA/IS states that the spread of noxious weeds is a significant impact, but that it will be fully mitigated. However, mitigation for noxious weeds has not been effective, as evidenced by a presentation to the Trinity Adaptive Management Working Group on December 9, 2013 by the Trinity County Weed Management Area. One of the representatives of that group said they saw the worst star thistle infestation they had seen on one post-construction mainstem project site. The TRRP's Executive Director then stated that the TRRP does not have funds to control noxious weeds, and that the program's partner agencies would have to provide funding if any is available, i.e. no funding is available for control of noxious weeds at this time. Based on the presentation to the TAMWG and the response of the TRRP's Executive Director, the spread of noxious weeds has not been fully mitigated to a less than significant level by previous projects. An EIR/EIS is required.

R

In addition, Trinity County has several policies and ordinances discouraging and even prohibiting the application of herbicides.² While the Draft EA/IS and the 2009 Master EIR talk about control of noxious weeds, there is no discussion of the method of control. The environmental document should clarify that the Trinity County policies exist and that herbicides will not be used.

R

Agricultural Water Systems

Mr. David Wellock, a Trinity River landowner at the confluence of Grass Valley Creek and the Trinity River, filed an unsuccessful tort claim for damages to his agricultural water system. His system has been in place for decades, but became overwhelmed by gravel following placement of a substantial amount of spawning gravel immediately upstream at the Lowden Ranch Project (see post card above with placed spawning gravel on edge of river). Domestic water users who had damage or expected damage to their water systems from implementation of the Trinity ROD were compensated. However, no such policy exists for mitigation of impacts to agricultural water systems such as Mr. Wellock's. Mr. Wellock has been to numerous TAMWG and TMC meetings requesting relief. The TAMWG made a motion of support on his behalf, but no relief is in sight for that impact. In addition, the proposed Bucktail Project is upstream of his agricultural water system. Therefore, an unmitigated significant impact exists from past projects and there is no viable mitigation proposed for future impacts to agricultural water systems.

S

THE TRRP HAS DEVIATED FROM THE TRINITY ROD AND MAINSTEM PROJECTS HAVE CHANGED SIGNIFICANTLY SINCE THE ROD NOT BEEN ADEQUATELY EVALUATED UNDER NEPA AND CEQA

No more than three side channels were considered in the 2000 Trinity River Mainstem Fishery Restoration EIS and Trinity ROD but many more than that have been built. As stated in the Draft SAB Phase 1 report:

"...the initial rehabilitation projects produced little to no immediate geomorphic response. Consequently, project size and complexity increased over time, including construction of medial bars, side channels, flow benches, alcoves, placement of large woody debris, riparian planting, and gravel injection during high flows (HVT et al. 2011)." Page 3

T

Engineered logjams were not considered or evaluated in the Master EIR. Engineered logjams pose both a navigational and aesthetic significant adverse impact.

As previously stated the enlargement and increased complexity of these projects has increased unmitigated site specific and cumulative environmental impacts that have not been adequately evaluated in prior NEPA and CEQA documents.

Therefore, the NEPA and CEQA documents that this Draft EA/IS is tiered upon are now stale and a new or supplemental EIS/EIR must be prepared pursuant to CEQ regulations 40 CFR

² Incorporated by reference is a list of Trinity County's herbicide policies and ordinances, see "Most Agencies Respect Trinity County Herbicide Policies" by Tom Stokely at http://c-win.org/webfm_send/404

section 1502.9 (c), "a supplemental EIS shall be prepared if there are substantial changes in the proposed action that are relevant to environmental concerns or there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action and its impacts." CEQA Guideline Section 15162 also applies in this circumstance, warranting a subsequent to the Master EIR or a supplement to it.

SIGNIFICANT REDUCTIONS IN ADULT SALMONID HOLDING HABITAT IN CHANNEL REHABILITATION AREAS

As evidenced by the January 2014 comment letter by the Trinity River Guides Association, incorporated herein by reference, there is a strong belief based on thousands of hours of observation of the Trinity River by fishing guides that adult salmonid holding habitat has been reduced significantly and cumulatively. The Bucktail area has some of the best remaining adult salmonid holding waters in the Trinity River upstream of Douglas City. Based on past projects, the potential elimination of those holding waters is would be a significant impact. If no commensurate benefit to the salmonid populations of the Trinity River can be shown from the proposed channel rehabilitation projects, it is not worth the negative impacts to other life stage salmonid habitats, adult holding habitat.

U

THE BUCKTAIL BRIDGE SHOULD BE REPLACED PRIOR TO CONSTRUCTION OF ANY PROJECT AT BUCKTAIL

The Bucktail Bridge located in the middle of the proposed Bucktail Project is in need of replacement due to Trinity ROD flows and completely unfunded. The analysis fails to consider construction sequencing and the hydrologic interaction of the two projects. Logic tells us that the bridge should be replaced before any "restoration project" is constructed at that location because the Bucktail Bridge is the dominant hydrologic feature in that reach of the river.

The need to replace the Bucktail Bridge was identified before the Trinity ROD was approved in an engineering report. Wishful thinking allowed the TRRP and its partners to ignore this key impact of increased flows contained in the Trinity ROD that is now reaching a critical stage where the abutments are being undermined by the high flow velocities.

V

A new bridge may completely change the river at that location. It would be prudent to replace the bridge first for the residents served by it, examine how the river responds and then design a channel rehabilitation project based on the new river morphology and geology. Shouldn't a new Bucktail Bridge come first so that a safe and functional bridge for people would be built before designing additional rehabilitation projects?

THE TRRP HAS NOT DEMONSTRATED SUCCESS IN MEETING ITS PRIMARY GOAL OF MORE IMPROVED FISHERIES

The goals of the Trinity River Restoration Program are contained in public law 98-541, as amended by Public Law 104-143, as summarized in the TRRP's Integrated Assessment Plan:

"The goal of the Program is to restore and sustain natural production of anadromous fish populations downstream of Lewiston Dam to pre-dam levels, to facilitate dependent tribal,

W

commercial, and sport fisheries' full participation in the benefits of restoration via enhanced harvest opportunities. The Program strategy for accomplishing this goal restores and perpetually maintains fish and wildlife resources (including threatened and endangered species) by restoring the processes that produce a healthy alluvial river ecosystem. The above restoration strategy will be achieved by implementing management actions in a science-based adaptive management program."

According to the Draft SAB Phase 1 report, the TRRP is failing to create significant new juvenile salmonid rearing habitat and meet fishery restoration goals. Despite predictions of a banner year for fall Chinook salmon, the Trinity River had some of the lowest recorded numbers of Chinook natural spawners, as well as some of the poorest adult returns in the entire Klamath-Trinity basin. According to the SAB report *"In most cases the increases in juvenile rearing habitat were not statistically significant in term of absolute changes in habitat area."* (page 16) The SAB also stated that for an unknown reason, juvenile fish habitat in the area of the most concentrated channel rehabilitation efforts declined slightly during the 3-year study period. (page 22)

While long-term fishery restoration goals are ambitious, the TRRP seems to be sliding backwards, and not even keeping up with fish production in other Klamath River tributaries. Based on a true Adaptive Management approach, an extensive evaluation of work done to date and alternative strategies is appropriate to undertake at this time. However, the TRRP has decided to continue pouring good money into these questionable mainstem channel rehabilitation projects, thus forgoing other vital work such as watershed restoration.

WATERSHED AND TRIBUTARY RESTORATION HAVE NOT BEEN ADEQUATELY ANALYZED AS ALTERNATIVES TO THE MAINSTEM PROJECTS

The Trinity River Record of Decision calls for implementation of an upslope watershed restoration program approximating \$1.8 million/year (using year 1999 dollars) throughout the Trinity River Basin as follows:

"The Trinity Management Council will guide an upslope watershed restoration program to address the problems of excessive sediment input from many of the tributaries of the Trinity River resulting from land use practices. The watershed protection program of the Preferred Alternative includes road maintenance, road rehabilitation and road decommissioning on private and public lands within the Trinity River basin below Lewiston Dam, including the South Fork Trinity River basin." (Trinity ROD page 14)

Small watershed restoration projects are a known and proven means of improving juvenile salmonid habitat survival but are not being considered as an alternative to the mainstem projects, which have yet to be shown significant benefits but have certainly caused significant adverse impacts.

Watershed restoration projects keep sediment from the tributary slopes out of the mainstem, which reduces flooding of property, another project purpose and need. The issue of causal linkage between the operation and construction of the TRD is related to a 1998 Interior Solicitor's Opinion when the old TRRP expired. It said that if BOR is to fund

W

X

watershed work, there must be a causal linkage between that work and the construction and operation of the TRD.

In 1993 Byron Leydecker had shut down the mainstem projects through obtaining a Cease and Desist Order from the NCRWQCB. As a result, millions of dollars went into projects in the South Fork and other tributaries. Brian Person's predecessor as Northern California Area Manager for Reclamation, Mike Ryan and others at Reclamation were furious about the shutdown, and Mike Ryan directed the Solicitor's Office to say that there is no causal linkage between the TRD and any watershed below the North Fork confluence. Even though rebuttal to it was written 11 years ago by the Trinity County Planning Department³, Reclamation has continued to claim that the Solicitor's Office can find no causal linkage between watershed work below the North Fork and operation and construction of the Trinity River Division of the CVP.

Watershed restoration has never received more than approximately \$600,000 in TRRP funds in any one year and in many, it has been often less than \$500,000. All work has been upstream of the North Fork confluence. The Watershed component of the Trinity ROD is clearly not being implemented as directed by the Trinity ROD.

Watershed restoration and tributary restoration have not been considered as alternatives to mainstem "restoration" projects and must be considered in an EIS/EIR. Watershed and tributary restoration projects would fulfill the overall Trinity ROD and legislative goal of creating or improving juvenile fish to restore Trinity River fishery populations to levels that existed prior to construction of the Trinity River Division (TRD) of the Central Valley Project (CVP).

Watershed and tributary restoration would also be consistent with the Draft EA/IS Purpose and need found in Section 1.5 to improve fish habitat, river dynamics and not increase flood risks to mainstem residents. Quite frankly, given the dismal performance of the mainstem rehabilitation projects and poor adult Chinook salmon returns, it would appear that efforts to button up watersheds to reduce fine sediment and to increase salmonid habitat in tributaries would be a much better investment to meet TRRP fishery restoration goals.

Despite repeated recommendations from the Trinity Adaptive Management Working Group (TAMWG), the watershed restoration component of the Trinity ROD has been arbitrarily limited in scope and grossly underfunded. The TRRP's lack of emphasis on fully implementing the watershed component of the Trinity ROD significantly undermines the 2004 decision of the Ninth Circuit Court of Appeals when it overturned a lower court decision to halt the ROD, and allowed the Trinity ROD to proceed.

In December 2002, federal Eastern District Court Judge Oliver Wanger issued a preliminary injunction partly based on the fact that the Trinity River Mainstem Fishery Restoration EIS/EIR did not contain a stand-alone alternative consisting of watershed and tributary

³ Incorporated by reference is the South Fork White Paper containing reasons why there is a causal linkage between construction and operation of the Trinity River Division and watersheds such as the South Fork Trinity River, see https://www.c-win.org/webfm_send/405

X

restoration to compare to higher flow releases from Trinity and Lewiston Dams (275 F.Supp.2d 1157). However, the Ninth Circuit Court of Appeals later overturned⁴ the lower court's preliminary injunction based on the fact that the Trinity ROD included a watershed restoration component that they assumed would be implemented but has instead been arbitrarily limited in both funding and geographic scope.

In addition, as the drought continues and the specter of a dead pool at Trinity Lake is a real possibility, restoration of tributary fish habitats will provide a refuge when mainstem conditions are unsuitable for salmonid survival. Incorporated by reference is a California Department of Fish and Game description⁵ of adverse mainstem conditions at the Trinity River Hatchery experienced during the 1977 drought, as an example of how future mainstem conditions could be unfavorable for salmonids.

Providing additional and improved salmonid habitat in tributaries and watersheds only makes sense. Steelhead and Coho salmon are primarily tributary species and natural production goals for those species have not been met to date.

X

CUMULATIVE IMPACTS

In addition to the cumulative significant impacts described above, the National Marine Fisheries Service's (NMFS) 2000 Biological Opinion (BO) for the Trinity ROD is stale because of new circumstances and information such as the 2002 Klamath Fish Kill. In addition, 2012 report by Reclamation⁶ found that the existing NMFS BO carryover storage requirement of 600,000 AF is "*problematic*" in meeting State and federal Trinity River temperature objectives protective of the fishery.

Given the deviations in implementation of the Trinity ROD as well as new circumstances, the National Marine Fisheries Service should prepare a new and separate Biological Opinion (BO) for the Bureau of Reclamation's Trinity River operations and the Trinity River Restoration Program to increase the minimum carryover storage on September 30. In light of the special status of the Trinity River to "do no harm", the revised NMFS BO should be separate from any BO for combined Central Valley Project and State Water Project.

Y

⁴ No. 03-15194 D.C. No. CV-00-07124-OWW

⁵ For CDFG's reports on the 1977 drought and its impact on the Trinity River Hatchery, see http://www.cdfg.org/webfm_send/406

⁶ See Bender MD (2012) Trinity Reservoir Carryover Storage Cold Water Pool Sensitivity Analysis. Technical Memorandum No. 86-68220-12-06, U.S. Bureau of Reclamation, Technical Service Center, Denver, CO. Accessed at <http://odp.trrp.net/Data/Documents/Details.aspx?document=1813>

Response to Comment Letter 23

This comment letter contains 25 distinct comments (A-Y). Following are the responses to those comments.

Comment 23.A.1 – Environmental documentation.

Reclamation is the project proponent responsible for funding the proposed project. Together, Reclamation and the BLM are the federal co-lead agencies under the National Environmental Policy Act (NEPA). The Regional Water Board is the lead agency under the California Environmental Quality Act (CEQA). The Trinity River Restoration Program's (TRRP or Program) sharing of information with the public has met public disclosure requirements and all relevant resource impacts were sufficiently analyzed in either earlier programmatic NEPA or CEQA documents or in the present site-specific environmental document. Management actions, including mechanical channel rehabilitation and watershed restoration projects, are being implemented in a form that is consistent with the restoration strategy documented in the Trinity River Flow Evaluation Final Report (TRFEFR; USFWS and HVT 1999). That restoration strategy was evaluated in the Trinity River Mainstem Fishery Restoration Final Environmental Impact Statement (Trinity River FEIS/EIR; USFWS et al. 2000), and incorporated into the 2000 Record of Decision (ROD; USDI 2000). A range of alternative approaches to restore and maintain the Trinity River fishery, some lacking mainstem mechanical channel rehabilitation, was evaluated in the FEIS/FEIR.

As explained in more detail in Chapter 1, the Draft EA/IS (NCRWQCB et al. 2013b) is a “tiered” environmental document. Both NEPA and CEQA allow subsequent documents to tier from an earlier analysis rather than duplicating work. Pages 5-6 of the Draft EA/IS describe how the document tiers to both the Trinity River Mainstem FEIS (USFWS et al. 2000a) and to the Channel Rehabilitation and Sediment Management for Remaining Phase 1 and Phase 2 Sites Master Environmental Impact Report (Master EIR; NCRWQCB and USBR 2009). Under California Code of Regulations, title 14, section 15177, subsequent projects, which the lead agency determines as being within the scope of the Master EIR, will be subject to only limited environmental review. The preparation of a new environmental document and new written findings will not be required if, based on a review of the IS prepared for the subsequent project, the lead agency determines, on the basis of written findings, that no additional significant environmental effect will result from the proposal, no new additional mitigation measures or alternatives are required, and that the project is within the scope of the Master EIR. The Proposed Project EA/IS contains a site-specific Project description and other information required to apply for enrollment under General Permit R1-2010-0028 for Trinity River channel rehabilitation activities, which the Regional Water Board will consider in making its determination and approval decision. All relevant resource impacts were adequately analyzed in either the programmatic documents (FEIS and the Master EIR) or in the site specific EA/IS. In light of the record, there is not sufficient evidence to trigger factors under California Code of Regulations, title 15, section 15162 that require the preparation of a supplemental EIR. For more detail on impact analysis and mitigation, refer to responses to comments 23.B, 23.M-S, and 23.U (for details on pool filling).

Comment 23.A.2 – Channel rehabilitation designs.

The proposed project site designs do not represent a change in design philosophy but rather an adaptation of one of the TRRP's restoration tools, mechanical channel rehabilitation, to better meet programmatic goals. The restoration strategy presented in the TRFEFR (USFWS and HVT 1999) and adopted by the ROD (USDI 2000) recommended mechanical channel rehabilitation to modify the degraded channel conditions in the mainstem Trinity River caused by the construction and operation of the Trinity River Division of the Central Valley Project.

Mechanical channel rehabilitation was recommended because constraints such as bridges and houses precluded recommending high flow releases (>30,000 cfs) that would be necessary to restore the channel

form. The Maximum Flow Alternative in the FEIS called for the use of all Trinity River inflows above the Trinity Dam, including periodic peak flow releases of this magnitude during extremely wet years. These extremely high releases could have produced the velocities needed for eroding riparian berms and periodically removing mature riparian trees, making mechanical rehabilitation unnecessary. However, the results of the analyses showed impacts to power use, real estate ownership, socioeconomics, and other considerations that made it unsuitable as a Preferred Alternative. Current ROD restoration releases are less than half the high flows needed to produce the velocities for a flow only alternative.

The TRFEFR and the ROD acknowledged the rehabilitation strategy would evolve through applied science, developing an ever more refined and effective process for achieving the goals of the ROD. The channel rehabilitation recommendations made in the TRFEFR (USFWS and HVT 1999) were general in nature. Alterations and adaptations to projects since 2010 are due to changes in the TRRP's understanding of what is needed from the mechanical channel rehabilitation component of the restoration strategy to meet programmatic goals. These changes have been supported by physical and biological assessments of channel rehabilitation sites under the new ROD flow regimes (hydrographs) as part of the Program's Adaptive Environmental Assessment and Management (AEAM) efforts. Project designs must incorporate current opportunities and constraints specific to the site design, as well as knowledge gained from assessments of previously constructed sites.

Documentation of the changes in channel rehabilitation process and projects can be found in the Channel Rehabilitation Design Guidelines for the Mainstem Trinity River (HVT et al. 2011). These changes were envisioned under the ROD in the establishment of the AEAM component of the recommendations (page 11):

The Implementation Plan contained in the FEIS (Appendix C pages C-1 through C-39, Stalnaker and Wittler 2000) describes in detail the activities which comprise this comprehensive program for Trinity River mainstem fishery restoration and is adopted as part of this decision. Sufficient information exists for implementation of certain actions under this decision, and "adjustments may be made to certain elements of the fishery restoration plan based on continuing scientific monitoring and studies" called for in the Adaptive Environmental Assessment and Management Program (AEAM).

Comment 23.A.3 – Watershed restoration.

The TRRP is implementing the watershed restoration program in a manner consistent with the ROD and FEIS by "addressing the problems of excessive sediment input from many of the tributaries of the Trinity River resulting from land use practices" (ROD page 14; USDI 2000). Since 2008 the TRRP has contributed over \$3 million toward implementation of more than 35 watershed restoration projects that are still ongoing (See Table 23.A.3 and Map 23.A.3). Partnering organizations have provided approximately \$3 million in matching funds or in kind contributions to those projects. This multiparty approach is in keeping with the Implementation Plan for the Preferred Alternative of the Trinity River Mainstem Fishery Restoration Program FEIS (Implementation Plan; Stalnaker and Wittler 2000) that recognized other sources of funding would be needed to implement watershed restoration activities. The Implementation Plan lists several other potential funding sources available for watershed restoration in the Trinity River basin including: S.B. 271 (California Salmon and Steelhead Restoration Account), Clean Water Act Section 205j and 319h funds, Pacific Salmon Restoration Initiative, and US Forest Service and BLM appropriated funds for land and watershed management. The TRRP will continue to provide technical assistance and funding to support watershed restoration actions when possible.

Comment 23.A.3 Table

Summary of TRRP Watershed Implementation, FY2008-2015

FY 2008 Projects	TRRP (\$)	Match (\$)
Conrad Gulch Road Decommissioning - TCRCD	10,000	25,000
Lowden Implementation - TCRCD	60,000	20,000
Soldier Creek Storm Proofing - TCRCD	150,000	69,500
Jessup Gulch Road Upgrade - TCRCD	25,000	15,500
Browns Fire Outreach/Inventory - TCRCD	5,000	2,500
Junction/Oregon Fire Outreach/Inventory - TCRCD	5,000	2,500
North Fork Road Upgrade/Storm Proofing - TCRCD	40,000	25,000
Lowden - SPI	30,000	30,000
BLM/Democrat Gulch Storm Proofing - TCRCD	55,000	20,000
Little Grass Valley Creek Feasibility/Site Assessment	25,000	6,000
Total FY2008	405,000	216,000

2008 TCRCD Watershed Coordination **68,000**

FY 2009 Projects	TRRP (\$)	Match (\$)
Grass Valley and Indian Creek Road Upgrade - TCRCD	75,000	
Democrat Gulch Phase II Stormproofing- TCRCD	50,000	
Junction City 2008 Fire Rehab - TCRCD	75,000	
Dark Gulch Sediment Basin, Sediment Removal - TCRCD	30,000	
China Gulch-Dutch Creek Sediment Reduction - 5C's	50,000	
Total FY2009	280,000	0

2009 TCRCD Watershed Coordination **59,874**

FY 2010 Projects	TRRP (\$)	Match (\$)
Coffin Fire Road Rehab - TCRCD	30,000	30,000
Phillips Gulch Road Rehab - TCRCD	20,000	0
Bierce Creek Road Rehab - TCRCD	30,000	30,000
Soldier Creek Main Haul Road Sediment Reduction - USFS	75,000	150,000
Indian Creek Rehabilitation and Sediment Control, Phase I - ESA PWA	32,400	0
Lower Sidney Gulch Rehabilitation and Sediment Control, Phase I - 5C's	73,300	12,100
Total FY2010	260,700	222,100

2010 TCRCD Watershed Coordination **55,268**

FY 2011 Projects	TRRP (\$)	Match (\$)
Middle Trinity Road Decommissioning and Upgrade - TCRCD	150,000	70,000
Union Hill Road Improvement - SPI	87,500	27,000

Indian Creek Rehabilitation and Sediment Control, Phase 2 - ESA PWA	107,000	0
West Weaver Creek Rapid Assessment - ESA PWA	55,500	35,000
Conner Creek Migration Barrier - 5C's	50,000	495,000
Browns Creek Road Sediment Assessment - 5C's	42,300	0
Total FY2011	492,300	627,000

2011 TCRCD Watershed Coordination 55,268

FY 2012 Projects	TRRP (\$)	Match (\$)
BLM Roads Sediment Reduction-TCRCD	260,000	50,000
Lower East Weaver Creek Habitat and Infrastructure Project-5C's	76,000	27,396
Sidney Gulch at Forest Service Compound Feasibility- 5C's	90,000	12,559
Conner Creek Fish Passage Feasibility- 5C's	50,000	8,508
LiDAR Tributary Data Acquisition-TCRCD	20,000	23,064
Total FY2012	496,000	121,527

2012 TCRCD Watershed Coordination 57,080

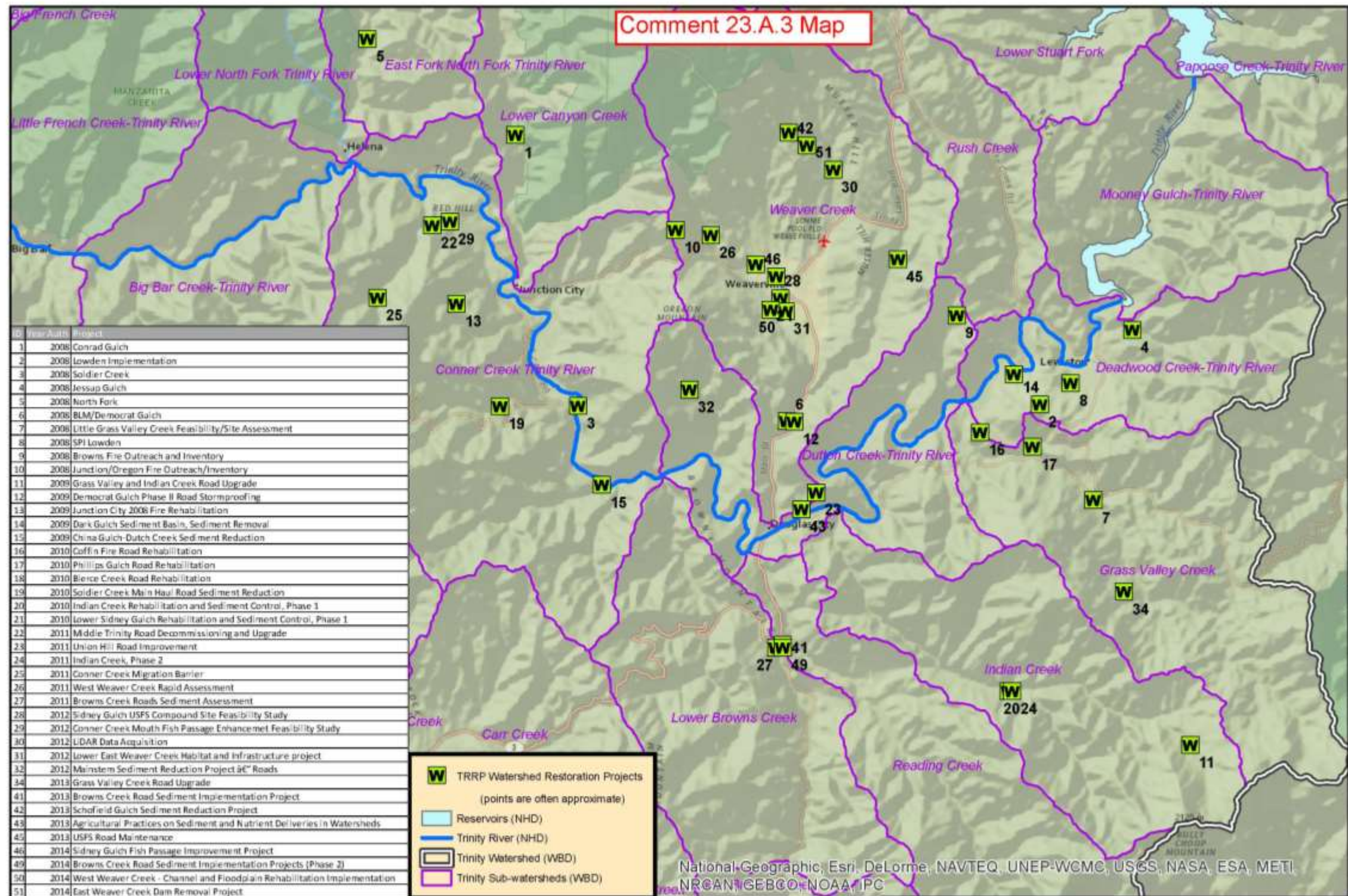
FY 2013 Projects	TRRP (\$)	Match (\$)
Grass Valley Creek Road Upgrade-TCRCD	95,591	10,439
Browns Creek Road Sediment Implementation Project-5C's	199,518	24,185
Schofield Gulch Sediment Reduction Project-5Cs	30,318	4,602
Agricultural Practices on Sediment & Nutrient Deliveries in Watersheds - WRTC	10,000	10,303
USFS Road Maintenance - USFS	165,591	165,500
Total FY2013	501,018	215,029

2013 TCRCD Watershed Coordination 56,178

Approved FY 2014 Projects	TRRP (\$)	Match (\$)
Sidney Gulch Fish Passage - 5Cs	146,937	65,382
Browns Creek Road Improvements Ph 2 - 5C's	284,580	18,332
West Weaver Creek - DWR/IRWMP, TCRCD	185,000	468,224
East Weaver Creek Dam Removal - 5C's	40,565	56,936
TCRCD Watershed Coordination	62,918	10,002
Total FY 2014	720,000	618,876

2014 TCRCD Watershed Coordination 62,918

TRRP Watershed Contributions, FY 2008-2014	\$3,155,018
Match/In-kind Contributions, FY 2008-2014 :	\$2,020,532
Total TCRCD Watershed Coordination (salaries, 2 vehicles, and fuel)	\$414,586
Total TRRP Watershed contributions 2008-2014	\$3,569,604



TRINITY RIVER RESTORATION PROGRAM (TRRP)
 U.S. Dept. of the Interior, Bureau of Reclamation, Mid-Pacific Region
 P.O. Box 1300, 1313 South Main St.
 Weaverville, CA 96093
 Tel: (530) 623-1800; Fax: (530) 623-5944

0 0.5 1 2 3 4 5 Miles
 0 0.5 1 2 3 4 5 Kilometers
 1:199,788



TRRP Watershed Restoration Projects
 Authorized 2008 - 2014

The 2010 Bryce Creek project is located off the map to the south.

This page intentionally left blank.

Comment 23.A.4 - Alternatives to mainstem juvenile salmonid habitat.

The TRRP is charged with implementing actions to restore the fishery resources of the Trinity River identified in the ROD. The NEPA process that led to the signing of the ROD evaluated a range of alternatives in their ability to meet the purpose and need of the document which was:

The purpose of the proposed action is to restore and maintain the natural production of anadromous fish on the Trinity River mainstem downstream of Lewiston Dam.

The need for this action results from Congress' (1) mandate that diversions of water from the Trinity River to the CVP not be detrimental to the Trinity River fish and wildlife resources; (2) finding that construction and operation of the TRD has contributed to detrimental effects to habitat and has resulted in drastic reductions in anadromous fish populations; (3) finding that restoration of depleted stocks of naturally produced anadromous fish is critical to the dependent tribal, commercial, and recreational fisheries; and (4) confirmation of the federal trust responsibility to protect tribal fishery resources affected by the TRD" (USFWS et al. 2000).

Given the purpose of the NEPA documents to address mainstem habitat degradation associated with the construction and operation of the Trinity River Division of the Central Valley Project, the TRRP cannot disregard the restoration of the mainstem Trinity River. The TRFEFR identified juvenile fish habitat [in the mainstem] as the limiting factor to restoration of the fishery resources in the Trinity River (USFWS and HVT 1999). While the tributaries of the Trinity River undoubtedly contribute to the natural production of anadromous salmonids, the greatest degradation of anadromous salmonid habitat associated with the TRD and subsequent declines in anadromous fish populations is in the reach of the mainstem Trinity River from Lewiston Dam to the North Fork-Trinity River confluence.

Comment 23.B – Program review.

The proposed channel rehabilitation projects are supported by data and evaluations consistent with the findings of, but not assessed in, the Scientific Advisory Board's (SAB) draft Phase 1 review report (complete title: Review of the Trinity River Restoration Program's channel rehabilitation strategy, Phase 1; SAB Draft 2013). There are several factors to consider when attempting to apply findings from the SAB's draft Phase 1 review: (1) the report is in technical review and is subject to revision; (2) quotes from the draft report need to be considered in context with associated explanations of data limitations to retain their meaning; and (3) the draft report evaluates "Phase 1" channel rehabilitation projects only (projects constructed between 2005 and 2010).

(1) The SAB draft Phase I review report is a draft and was distributed to the Trinity Management Council (TMC) and Trinity Adaptive Management Working Group (TAMWG) as part of the internal technical review to make sure that the SAB had not over looked or misinterpreted information provided by TRRP technical staff. As a draft, it cannot form the basis for inference from the scientific findings until finalized.

(2) Excerpts from scientific papers (e.g., the SAB Draft report) should include subject matter sufficient to convey appropriate context, or be accurately referenced to allow complete review of the data, in order to retain the study's integrity. Selective application of broad statements while excluding corresponding details is misleading and establishes the desired conclusion in advance. Selections from the SAB draft Phase I review report included in comment letter 23 suggest that the 2014 Draft EA/IS is not supported by sufficient evidence of benefits to the riverine habitats and associated fishery resources. The selections were presented without accompaniment of context or additional data included in the original text. Referencing the SAB Draft report in this manner creates an environment for uninformed judgment.

As an example, Comment Letter 23 includes the statement: "Increases in juvenile rearing habitat were not statistically significant." Examination of the complete text shows that the statement refers to increases at base flow, acknowledged by the authors as representing only a portion of the total habitat available over

the course of an annual hydrograph. Total rearing habitat is based on the role of all habitats across the range of flows and associated habitats that juvenile salmonids must live in before migration to the ocean.

The TRFEFR (USFWS and HVT 1999) specifically noted the decrease in Trinity River rearing habitat between approximately 300 and 2,000 cfs as a limiting factor for anadromous salmonids. These are flow conditions not evaluated or reported in the SAB Draft Phase I review report. This habitat bottleneck between 300 and 2,000 cfs, which is a result of the degraded “U-shaped” Trinity River channel, necessitates the need for mechanical channel rehabilitation as part of the strategy to restore the riverine habitats and eventually the fishery resources of the Trinity River. Another component of the restoration strategy is to restore, within physical infrastructure and private property constraints, flows and coarse sediment required to restore fluvial processes that will create and maintain riverine habitats. Because there has been only one extremely wet water year since the Program began mechanical channel rehabilitation, there has been limited ability to study the benefits of high flows at the project sites. The only maximum restoration flow of 11,000 cfs occurred in 2011, after the Phase I activities had been completed.

(3) The SAB Draft Phase I review report is an assessment of Phase I activities from 2005-2010. Later projects were not considered or evaluated in the report and do not reflect more recent advances in project design and construction or the latest monitoring data. The Phase I review timeframe is not long enough to capture changes in the river system, habitat, or fish populations, especially given that it will likely require several wetter water years to begin to realize more systemic fluvial processes and the establishment of a dynamic riparian corridor will take time to establish. Studies from subsequent projects contribute greatly to the body of data on which design modifications were based.

Lessons learned from Phase 1 are being incorporated into the Phase 2 design process. The site design reports developed for the Phase 2 sites commonly include explicit descriptions and analysis of how individual site elements are expected to change over time in relation to variable flows. These descriptions showcase the continued adaptive nature of the channel rehabilitation site design process. The Program incorporates public input to designs at the conceptual and intermediate stages and proposed designs are vetted through public meetings and public participation in technical work group meetings. Designers integrate physical models to predict how sites will perform and evolve under different flow regimes. With current models, the designers may choose alternative implementation scenarios to increase/enhance juvenile salmonid rearing habitat, restore fluvial processes, and restore proper riparian function. Figure 23.B.1, below, shows how juvenile rearing habitat, between pre and post-construction condition, has changed at recent channel rehabilitation sites (USFWS unpublished data*).

Restoration Reach Evaluation: Flow and channel rehabilitation actions are anticipated to create changes in rearing habitat availability through the 40-mile restoration reach. Rearing habitat availability was mapped at 32 randomly selected sites annually between 2009 and 2013 as part of a multiyear study. The total area of rearing habitat within the restoration reach in 2013 was about 4.22 million square feet (391,688 m²) for fry, and 5.22 million square feet (485,073 m²) for presmolt. This represents the highest estimate recorded in the study. In addition, 16 of this year’s study sites had been sampled in 2009. Of the resampled sites 14 had a higher total habitat area for fry and 11 sites had higher habitat values for presmolt, further supporting restoration reach scale increases in rearing habitat availability (TRRP Draft 2014 Annual Report).

Restoring River Processes: Channel rehabilitation projects involve more than just providing immediate rearing habitat gains for juvenile salmonids. They also create a floodplain and channel geometry that flow and sediment regimes can interact with, and that will maintain a diversity of hydraulic conditions that perform naturally. The suite of TRRP activities are intended to work together to restore the natural processes most impacted by the upstream dams, that are critical to sustain salmonid populations during their riverine life stages.

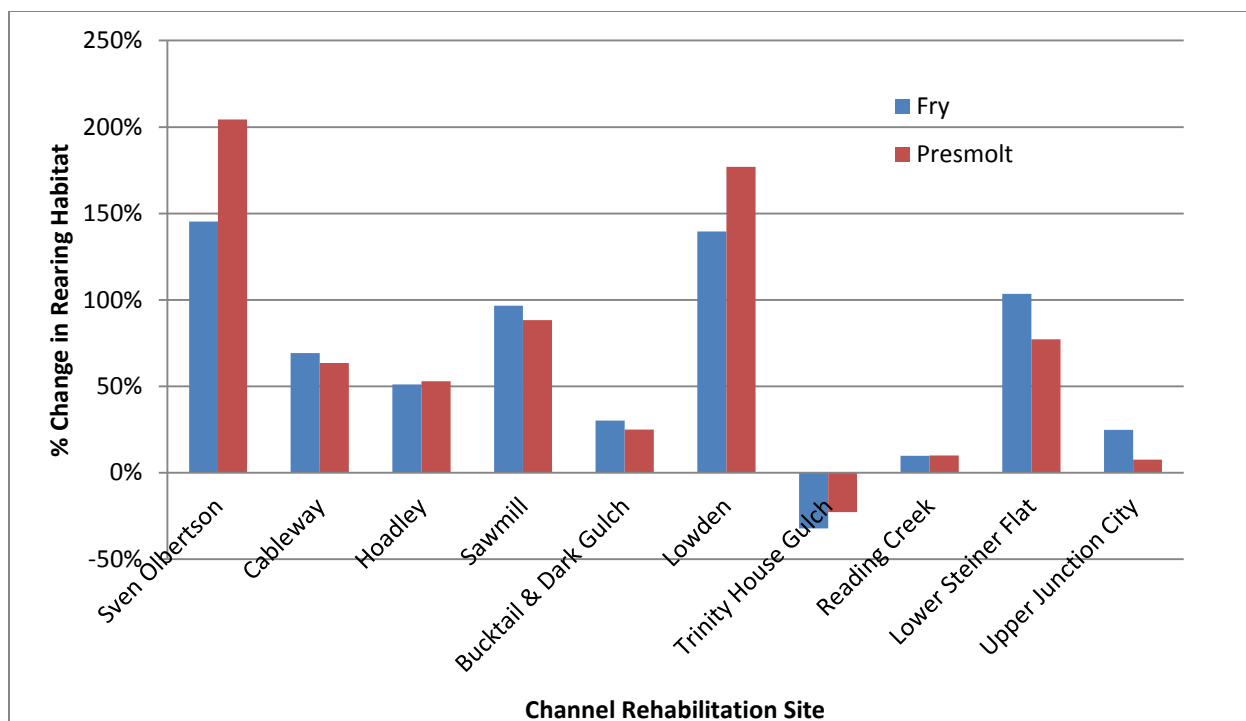


Figure 23.B.1. Percent change of Fry and Presmolt Salmonid Rearing Habitat at Channel Rehabilitation Sites (2008-2012) at Trinity River flows between 300 and 450 cfs.

Between the early 1960's and the late 1990's, fine sediment (primarily sand) no longer routed through the 40-mile restoration reach as it did before the river was regulated. This fine sediment accumulated on the riverbed or along the banks, choking the gravel bars and other essential salmon and steelhead habitat. By the 1990's, much of the channel was a sand-cobble matrix unsuitable for salmonid habitat, a result of artificial conditions which failed to support dynamic processes associated with a healthy river system. Flow releases from Lewiston Dam were unsuitable for promoting early successional riparian vegetation beyond the dense strip of brush that appeared along the low-flow channel margin, which eventually confined the channel to a simplified geometry.

Implementation of the management actions outlined in the 2000 ROD has restored many of those components critical to a functioning alluvial ecosystem. Using the post-ROD flow regime to integrate channel rehabilitation design features has induced change that benefits the Trinity River's anadromous fishery and associated wildlife. Now, fine sediment within the channel bed is frequently mobilized, routing sand through the system or depositing it on the channel margins. Coarse sediment addition during high spring flows has augmented the supply of gravel lost to blockage behind dams, creating improved spawning conditions.

Newly created habitats associated with channel rehabilitation activities are being used by spawning salmon. As an example, the following figures show the distribution of redds before (Figure 23.B.2) and after (Figure 23.B.3) construction of the Wheel Gulch Channel Rehabilitation Site - which incorporates a split flow channel and large wood features. Prior to construction, spawning activity was confined to the left bank (looking downstream). Following construction in 2011, redds were found in the newly created split channel area as well as the left bank where they had previously been observed. This change in distribution of redds indicates that new spawning habitat was created as a result of mechanical channel rehabilitation and that the newly created habitats were utilized.

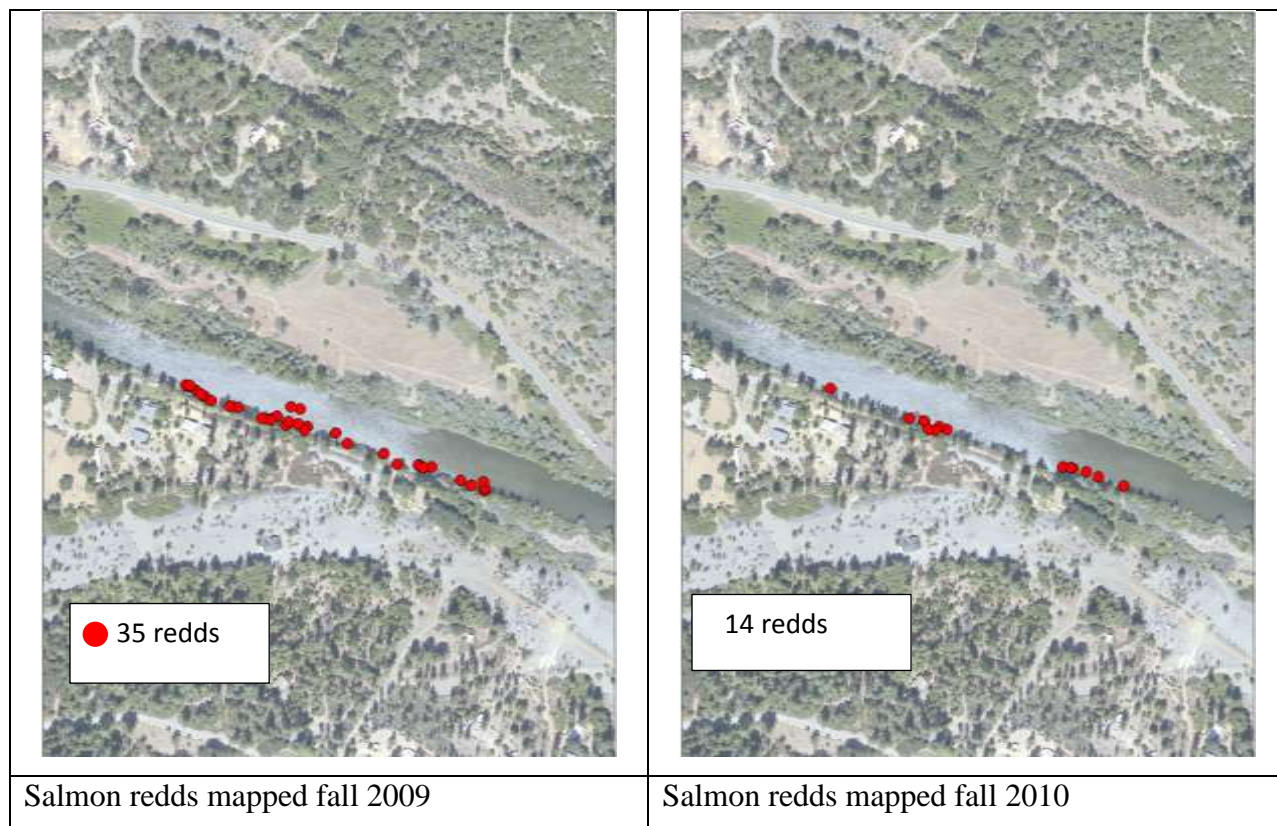


Figure 23.B.2. Wheel Gulch Rehabilitation site pre-construction and spawning activity (redds) 2009 and 2010.

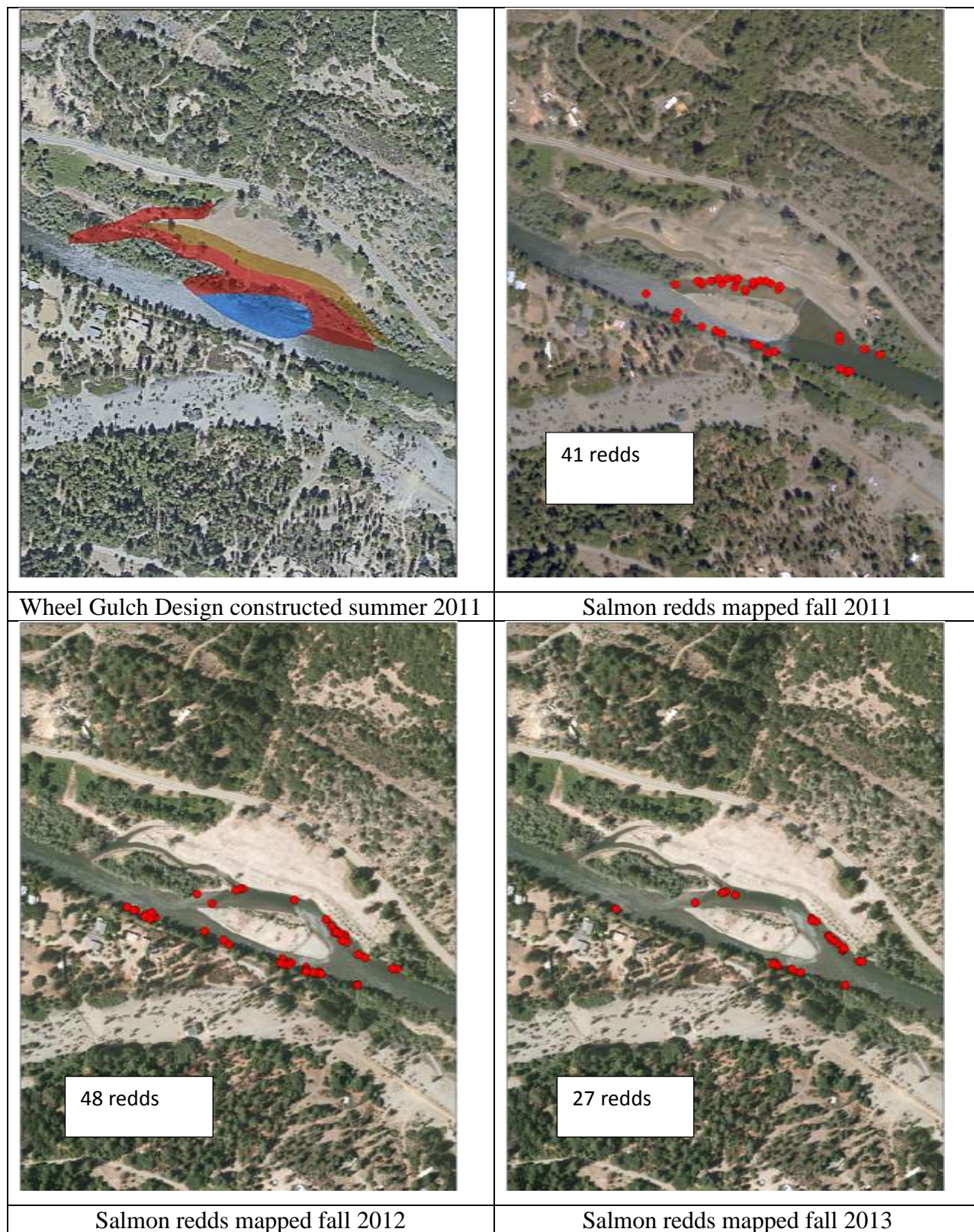


Figure 13.B.3. Wheel Gulch Rehabilitation site design and spawning activity (redds) 2011 to 2013.

Temperatures in the Trinity River are not adversely affected by gravel introduction. The cold-tailwater release of the ROD hydrograph with its 450 cfs summer baseflow results in cool water temperatures that extend much further downstream than when minimum flows were managed for 100 cfs. Suitable adult holding is found further downriver than it used to be. Some of the downstream increases in spawning activity are likely attributable to this expanded zone of suitable temperature. The salmon population reproducing in those reaches has experienced only a few generations of improved temperatures for holding, spawning, and rearing, and spawning activity is increasing.

Black cottonwood and other native riparian species are being re-established throughout the restoration reach, particularly on floodplains now available to perennial flows. This is creating new habitat for vertebrate and invertebrate species essential to a complex, functioning ecosystem. Establishing targets that build on the progressive body of knowledge of riparian and riverine processes is an ongoing adaptive management consideration within the Program.

The Program's foundational documents made a point of identifying the linkages between important ecosystem processes and a healthy river. Once these processes are restored sufficiently for the river to create and maintain sufficient quality and quantities of optimal habitats on its own, the river will be restored. In the meantime, channel rehabilitation activities that directly create rearing habitat bridge the gap for struggling salmonid populations, between a river that is still impaired by human impacts and a future healthy, managed river that can sustain salmonid populations with minimal intervention.

Refer to response to comment 23.F for a discussion of adult salmonid returns to the Trinity River.

Comment 23.C – Impacts greater than anticipated.

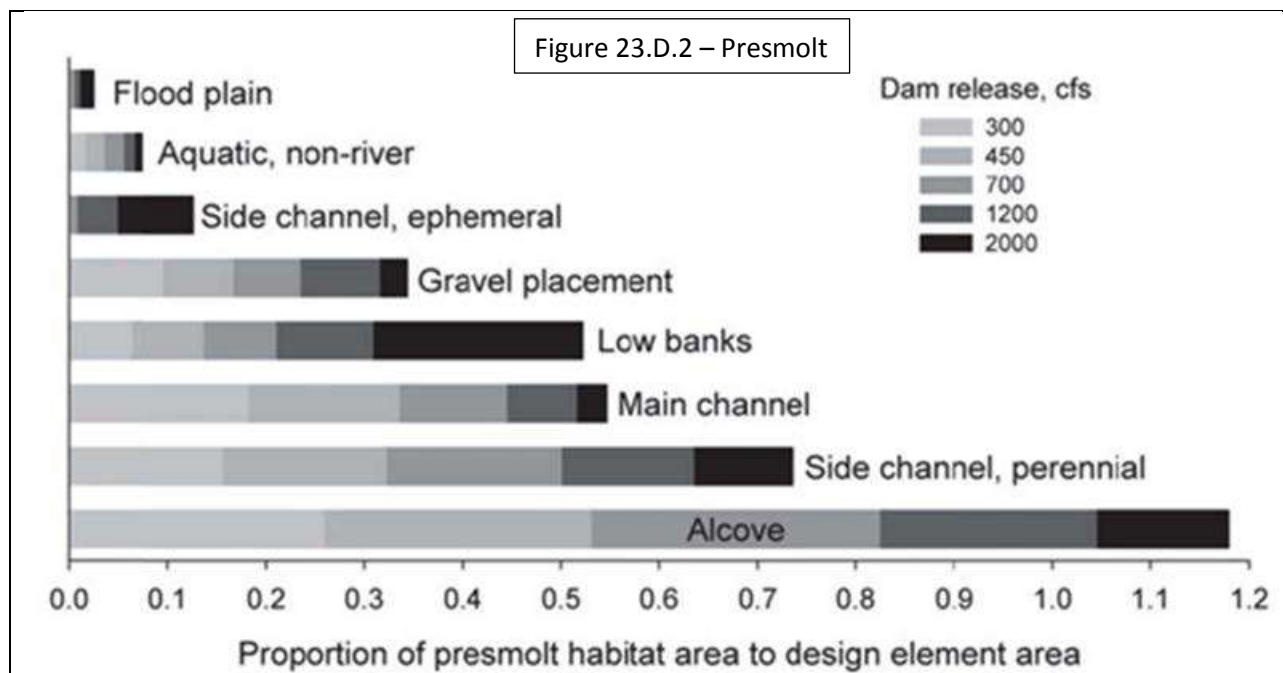
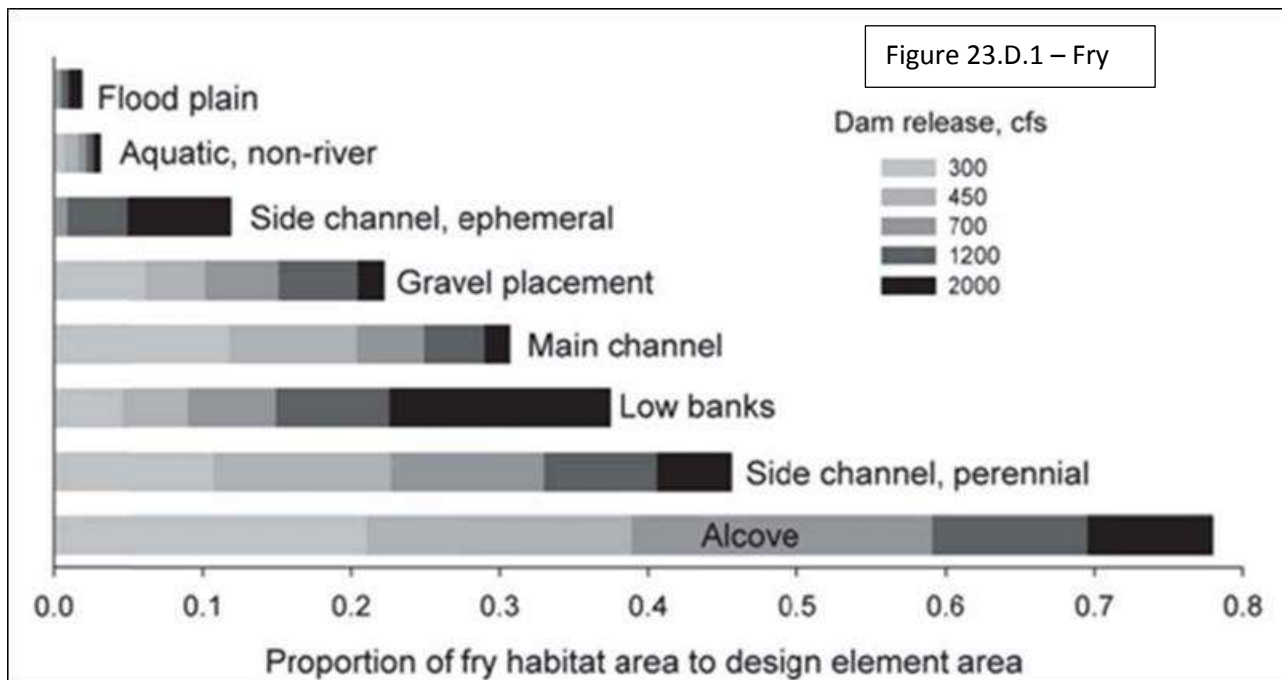
For information on anticipated rearing habitat benefits see response to comment 23.B. For information on mitigation measures for resources of concern, refer to responses to comments 23.M (covers multiple resources), 23.N (public access), 23.O (navigation), 23.P (noise and traffic), 23.Q (turbidity), 23.R (noxious weeds), 23.S (agricultural water systems), and 23.U (pools and adult salmonid holding habitat).

Comment 23.D. – Channel rehabilitation inconsistent with ROD.

Refer to response to comment 23.A.2 for additional information related to the consistency of channel rehabilitation actions with the ROD. Information below specifically addresses the number of side channels, engineered logjams, and channel rehabilitation site size and complexity.

The 2000 Trinity River Mainstem Fisheries Restoration Program Final Environmental Impact Statement (FEIS) does not limit side channel establishment and enhancement to three sites. The FEIS provides a broad-scope analysis in order to plan site-specific designs based on adaptive management. The 2009 Master EIR-EA/Final EIR provides site-specific environmental analyses necessary to authorize ongoing activities originally identified in the Interior Secretary's December 19, 2000 Record of Decision (ROD) as necessary steps toward restoration of the Trinity River's anadromous fishery. This two-part environmental document, in combination with the 2000 FEIS, meets NEPA and CEQA requirements and fulfills evaluation needs stipulated under Executive Orders 11988 (floodplain management), 11990 (protection of wetlands), 13112 (invasive species), and 12898 (environmental justice).

The goals and objectives of the Program as described in the ROD remain the same, as do the purpose and need. Technological developments and channel rehabilitation strategies modified through adaptive management have combined to meet ROD objectives. Techniques to increase rearing habitat have evolved to include construction of large wood structures and alcoves (SAB draft report; Martin et al. 2012). These, along with the establishment or expansion of side-channels, continue to be mechanisms for creating low velocity, high-value habitat. (See Figures 23.D.1 and 23.D.2). Phase 2 projects will continue to incorporate designs with features that produce the largest amount of rearing habitat at a wide range of flows, and that promote dynamic alluvial reaches (e.g., large wood elements).



Figures 23.D.1 and 23.D.2 - Areal efficiency of channel rehabilitation features (design elements) in providing suitable fry (23.D.1) and presmolt (23.D.2) habitat area. Areal efficiency is the ratio of habitat area to design element area and may exceed 1 when habitat area for all flow increments sums to an area greater than the area of a given design element (Reproduced from Figure 8, SAB Draft 2013 Report).

References to large wood/large woody debris (LWD) structures and/or boulders in the Master EIR are frequent and systematic throughout the document. The use of LWD/boulders to enhance channel complexity, divert flow, increase habitat area and function, and improve nutrient and organic matter retention are discussed at least 35 separate times. In addition, site-specific EA/ISs include analysis for specific projects where these structures were proposed for the purposes stated above. The Program has adopted river restoration techniques used throughout the northwest, such as the use of large wood, to create and maintain complex aquatic habitat and to promote fluvial geomorphic processes and change. Large wood installed by the Program on the Trinity River includes individual pieces, small groups of logs (e.g., 3-5 pieces), habitat structures (10-20 pieces), and engineered log jams (>30 pieces which are designed to withstand a design flow by a licensed professional engineer). The use of large wood structures has been specifically recommended for use on the Trinity to enhance habitat for salmonids (Cardno Entrix and CH2MHill 2011).

It is true that current channel rehabilitation projects are more complex than those before 2010. Data from earlier projects indicated that smaller scale efforts were not creating enough immediate habitat needed by juvenile fish. To better meet Program goals, the TRRP developed a comprehensive adaptive management approach based on the Channel Rehabilitation Design Guidelines (CDG) for the Mainstem Trinity River (Guidelines; HVT et al. 2011). The CDG was issued to TRRP design specialists so that the four design groups could use a common and consistent suite of design criteria to incorporate better, and more effective, channel rehabilitation techniques.

The CDG uses empirical relationships and data from reference reaches to develop design methods and features at reach and site scales. These include: 1) planform design dimensions, 2) bankfull channel dimensions, 3) low-flow channel dimensions, 4) guidelines for constructed bars, 5) guidelines for secondary channels, 6) flood plain design dimensions and guidelines for flood plain inundation, 7) riparian vegetation design criteria, 8) large wood placement guidelines, and 9) other considerations such as incorporating bedrock into a design. The CDG also describes a detailed hydrologic analysis for the development of reach-specific estimates of summer and winter baseflow magnitudes and durations.

The Program continues to move forward with a decision support system to better characterize the response of Trinity River anadromous fish populations to restoration efforts. While a large proportion of Program funding goes to fishery management partners for monitoring and evaluation of Trinity River anadromous fish populations, it was determined that resources were needed to create the Trinity River Fish Production Model to measure population response specific to Trinity River projects. A simpler model (SALMOD) was used by the SAB.

Comment 23.E.1 – Bucktail Bridge condition.

The Bucktail Bridge on Brown's Mountain Road is not at risk of failure. Caltrans structure and maintenance investigations gave the bridge a 96.6 sufficiency rating in September 2013 (Caltrans 2013). There is, however, a need to replace the bridge because it lacks sufficient hydraulic capacity to convey the 100 year flow event.

The Trinity River transports coarse sediment and large wood, with greater amounts during flood events and during the higher restoration flows. Following a 2010 feasibility study, the existing Bucktail Bridge was reevaluated and identified as having the potential to cause a backwater effect, and a recommendation was made to replace it with a new, single-span bridge (CH2MHill 2012). It was determined that a new bridge would provide the opportunity to design a project upstream that would dramatically improve fry and juvenile rearing habitat.

The Program has worked with Trinity County and funded CH2MHill to develop a new bridge design and create all construction specifications for a replacement bridge. The design includes floodplain bench

revisions to improve habitat conditions in the main and side channel during low (450 cfs) and moderate flow (1,200 to 2,000 cfs) conditions, and a perennial low flow side channel. A 155 foot clear span, steel truss bridge was recommended to prevent water constriction during high flows and allow gravel to route freely through that area. It is the intent of the Program to construct the Bucktail channel rehabilitation project in coordination with the building of a new Bucktail Bridge. Construction of this new bridge would allow for boater passage during high restoration flows and would reduce scour at the abutments of the bridge and further downstream. The Program is working with the county to meet environmental permitting needs and plans to complete a joint NEPA/CEQA environmental document in summer 2014. Funding sources to cover the approximately 2.5 million dollar bridge installation cost (CH2MHill 2013) are being explored by Trinity County Department of Transportation staff that is supported by TRRP funding.

Comment 23.E.2 – Sequencing the bridge replacement with proposed project.

Plans for replacing the Bucktail Bridge are currently being considered by the Trinity County Department of Transportation. The Proposed Project would integrate the new bridge design at the Bucktail Channel Rehabilitation Site, if built. A new Bucktail Bridge would reduce constriction, increase conveyance, and eliminate the backwater effect that exists currently. For instance, the new bridge would allow gravel augmentation upstream without affecting downstream water surface elevations. However, implementation of the proposed Bucktail channel rehabilitation project is not dependent upon construction of a new bridge because the proposed project can be redesigned to accommodate the constraints of the existing bridge.

The proposed Bucktail channel rehabilitation project was designed to integrate the effects of a new bridge with complementary features that would result in the greatest amount of high value habitat. Two dimensional (2d) hydraulic modeling presented in the Draft EA/IS accommodates the new bridge design and flood conveyance data. However, the project proponent (Reclamation) does not have approval authority for construction of a new bridge. As such, alternate 2d models have also been generated for site conditions that do not include a new bridge. If a new bridge is not constructed, the Program would be obligated to redesign some areas of the channel rehabilitation site (primarily downstream areas closest to the bridge), as site conditions would exhibit different hydrologic and geomorphic constraints. In that event, a supplemental environmental document would be prepared and circulated for public review of a revised Bucktail channel rehabilitation project.

Refer to response to comment 23.H.2 and 23.I as well for related Bucktail Bridge response information.

Comment 23.F.1 – Juvenile rearing habitat.

Refer to response to comment 23.B for information related to the creation of juvenile rearing habitat.

Comment 23.F.2 – Adult salmon returns.

Fall Chinook adult returns for the Trinity River were lower than projected (Pacific Fishery Management Council. 2013. Preseason Report I: Stock Abundance Analysis and Environmental Assessment Part 1 for 2013 Ocean Salmon Fishery Regulations), but fishery management agencies recognize the annual variation in returns to the river are affected by factors beyond the control of the TRRP. The TRRP fishery management partners are the U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), Hoopa Valley Tribe, Yurok Tribe, California Department of Fish and Wildlife (CDFW), and the U.S. Forest Service (USFS). Though ocean conditions and the ocean fishery may affect the survival of Trinity River fish and may strongly affect the return of adult salmon to the Klamath-Trinity Basin, these are outside of the influence of the TRRP.

Comment 23.G – Watershed restoration and alternatives to mainstem juvenile salmonid habitat.

Refer to responses to comments 23.A.3 and 23.A.4.

Comment 23.H.1 – Refers to comments 23.A – 23.G.

Refer to response to comment 23.A through 23.G.

Comment 23.H.2 – Specific course of action.

The relative merits of Bucktail bridge replacement and an accelerated watershed restoration program is a technical issue requiring intensive analysis of impacts of a high flow option and small watershed project effects on restoration program goals of mainstem river processes and Trinity River anadromous fishery resources. We will share the suggested course of action with TRRP technical workgroups for analyses of projected outcomes that will be provided to the Trinity Adaptive Management Working Group and the Trinity Management Council.

Comment 23.I – Specific course of action.

As indicated in the response to 23.H.2, we will share your suggested course of action with TRRP technical workgroups for consideration of geomorphic and ecological effects and to the Trinity Adaptive Management Working Group and the Trinity Management Council.

1. In reference to the six steps suggested in your letter, the following responses to comment address these same issues: See responses to comment 23.E and 23.I related to the replacement of Bucktail Bridge.
2. Please refer to response to comment 23.A related to the implementation of the watershed restoration program.
3. The SAB will complete their final Phase 1 review report in spring 2014.
4. The TRRP has embraced the SAB's recommendation to develop a Decision Support System (DSS) since it was made in 2012. The current focus is on development of a fish production model for the Trinity River.
5. Adaptive management has been occurring to benefit fisheries restoration since the TRRP office opened in 2002. In recent years, rigorous hypothesis testing has been implemented and 2-dimensional flow and morphodynamic models have been applied for assessing design options and management scenarios, and projecting physical and biological responses. The Program is now developing the fish production component of the DSS and integrating workgroup activities to continually refine the current adaptive environmental assessment and management program.
6. Geomorphically effective flows which may improve dynamic conditions on the Trinity are relatively rare (e.g., extremely wet years occur 12% of the time and wet years 28%). Consequently, it is all the more important to construct channel rehabilitation sites now so that they may achieve projected transformation with the range of limited, available restoration flows, and initiate restoration of the fishery resources in a timely manner. Any delay in implementation would result in a delay of restoring trust assets for the Hoopa Valley and Yurok tribes, for the American public, and other beneficiaries of dependent fisheries including ocean fisheries, recreational fisheries, and commercial fisheries.

Comment 23.J – Collaboration need.

Comment noted. We thank you for your willingness to work with all the Trinity River Restoration Program partners and cooperators to ensure “the ability of dependent tribal, commercial, and sport fisheries to participate fully, through enhanced in-river and ocean opportunities, in the benefits of restoration.”

Comment 23.K.1 – Construction break required.

The quoted text is from Appendix C of the FEIS (Stalnaker and Wittler 2000) rather than the ROD. The full statement reads:

This evaluation will be ongoing beginning with construction of the first projects, but an interim period without construction activities may be necessary to fully evaluate the effectiveness of project designs and the effect of the new flow regime before beginning construction on the remaining sites.

The portion of the quoted statement omitted from the comment regarding on-going evaluation is important. The TRRP has conducted continual evaluations of the restoration sites starting with the first TRRP project, Hocker Flat in 2005. The post-construction assessment of Hocker Flat indicated that little rearing habitat was produced, so the next generation of restoration sites evolved and subsequently provided more rearing habitat. This process of evaluation, adaptation of methods and improvement has continued throughout the construction period. During this time, site designers have not only assimilated findings from Trinity River assessments, but have also incorporated findings from river restoration technical and scientific literature published since the ROD. Based on the on-going nature of our evaluations, the relatively slower pace of implementation compared to what was envisioned in the ROD, and the types of water years in recent history, the TRRP has chosen not to take the optional pause in construction.

Comment 23.K.2 – Bucktail Bridge is Reclamation's responsibility.

Refer to response to comment 23.E.2.

Comment 23.K.3 – Commitment.

Regarding Reclamation's long-term commitment to Trinity River restoration, several elements of the Program's restoration strategy are continual. Specifically concerning flow and sediment management, the Secretary was directed to finish the TRFEFR (USFWS and HVT 1999) and make a permanent recommendation for Trinity flow needs.

As part of the Central Valley Project Improvement Act (P.L. 102-575), the Secretary of the Interior was directed to complete the Trinity River Flow Evaluation and develop recommendations "based on the best available scientific data, regarding permanent instream fishery flow requirements..." (USFWS and HVT 1999; also found on page 1-12 to 1-13 in the Draft EIS/EIR).

The long-term need for coarse sediment (gravel) augmentation goes along with the permanent (=long-term) increase in instream flow releases to maintain the creation and maintenance of riverine habitats as it was a component of the TRFEFR recommendations (USFWS and HVT 1999) and adopted as part of the Flow Evaluation alternative (page 2-21 of Draft EIS/EIR).

Comment 23.K.4 - Watershed restoration.

Refer to response to comment 23.A.3.

Comment 23.L – Less benefit than anticipated.

Refer to response to comment 23.B for a description of monitoring data and analyses used to support the project justification / anticipated benefits. Response to comment 23.B also addresses the appropriateness of using findings from the SAB's Draft Phase 1 review to evaluate TRRP projects.

Comment 23.M – Impacts greater than anticipated and unmitigated impacts.

The Master EIR (NCRWQCB and USBR 2009) and the Draft Bucktail and Lower Junction City EA/IS both review and analyze the potential environmental impacts from implementing proposed activities. The analyses are presented by potential environmental resource area with the Master EIR conducting the analyses on the programmatic scale and the Draft Bucktail and Lower Junction City EA/IS on the site

specific scale. Analyses for each resource area (e.g., water quality, recreation, vegetation, cultural resources, etc.) include discussions of the existing environmental setting, applicable significance criteria, potential environmental impacts, and mitigation measures. In all cases, the identified potentially significant impacts from implementation were found to be reduced to less than significance through the implementation of mitigation measures. These mitigation measures have been required to reduce impacts to less than significant at past TRRP project locations and would be required during future activities as specified in the Draft Bucktail and Lower Junction City EA/IS. If environmental analyses had determined that there would be significant impacts from project implementation, or cumulatively from implementation of all the projects, a statement of over-riding considerations would have been required under CEQA.

The commenter's letter calls out 25 impacts which the commenter identified as significant. These potential impacts were evaluated in the environmental documents and each was coupled with a set of prescribed mitigation measures which would reduce these to a less than significant level. Appendix A of the Draft Bucktail and Lower Junction City EA/IS summarizes all potential project impacts and mitigation measures prescribed for each environmental resource area. The 25 potential impact areas identified in comment 23.M and their associated mitigation measures are included in Table 23.M – Potential Impacts and Mitigation, which is included at the end of the response to this comment letter.

Refer to response to comment letters 21 and 22 for additional information on turbidity and specific 2013 monitoring. Refer to response to comment 23.B and comment 23.C. for more information concerning current project designs and analyses.

Comment 23.N – Public access.

TRRP projects have not decreased access on public (BLM or Forest Service) managed lands. In cooperation with the BLM, the TRRP has improved boat ramps and river access at locations where work has been completed (e.g., Dark Gulch – Bucktail ramp, Indian Creek, Lower Steiner Flat, and Lorenz Gulch Channel Rehabilitation sites). Boat ramps have been made more durable (e.g., at the Lower Steiner Flat “Chop Tree” boat ramp in 2012), increased in size (at the Bucktail ramp in 2008), constructed (at the Lorenz Gulch site in 2013), or made temporarily available (Douglas City campground ramp was opened during construction at Lower Steiner Flat during 2012). While there have been some short-term public land closures, to protect health and human safety during channel rehabilitation site construction, closures have been limited in duration and have included opportunities for boat ramp use before or after construction hours (e.g., at the Bucktail ramp in 2008 and at the Chop Tree ramp in 2012).

No designated river access sites have been permanently closed because of channel rehabilitation work. However, vehicular access has been excluded in some locations on BLM managed lands in accordance with the BLM Redding Resource Management Plan and the Aquatic Conservation Strategy (USDA and USDI 1994) to protect the riparian corridor. In instances where vehicular access was decreased, the intent to do so was identified in environmental documents with the objective to maintain/enhance water quality and riparian conditions. Elimination of vehicles from the riparian corridor is expected to reduce compaction of soils, promote riparian vegetation, and to reduce waste typically brought in by vehicles.

BLM is now reviewing options to extend a walking path and river access which was initiated during 2012 construction at the Lower Steiner Flat Project area. In 2013 the Lower Steiner Flat site path was connected with a path at the downstream Lorenz Gulch site. Options are now being investigated to connect additional portions of the river along Steiner Flat Road.

Finally, the removal of vegetation required to lower floodplain elevations and construct some riparian features has actually increased river access for pedestrian traffic (and fishing) in some locations (e.g., Lowden Ranch and Lower Steiner Flat sites). While these areas have been replanted with native

vegetation and will develop naturally recruiting riparian vegetation, public access has been enhanced for near-term activities.

See also responses to comment 23.M.

Comment 23.O – River navigation.

TRRP in-channel activities are accomplished so that construction impacts to navigation are minimal and the river remains open for passage. Management actions of the TRRP, including release of variable annual restoration flow volumes from Lewiston dam, are restoring processes that increase the dynamic nature of the river. This dynamism is critically important for the long-term production of fish because it creates future habitat. As river processes route sediment, scour holes, deposit sediment to create bars, etc., the channel and its floodplains adjust in form, alignment, and character. While winter flow releases are outside the scope of this analysis, impacts to navigation occurring on the Trinity River are similar to those found on a naturally flowing river and do not require mitigation.

Ease of navigation will likewise vary as the river adapts to a changing hydrology with changes in form. Location of the river's edges, riffles and pool depths will adjust with the changing hydrology, especially in response to extremely wet hydrographs. These changes will necessitate adjustments in navigation routes. River navigation may be difficult during droughts or other periods when water levels are low. However, these boating flows compare favorably to historic pre-dam flows at Lewiston because of base flows established by the ROD. Flows as low as 28 cfs were reported in the pre-dam river (USGS Lewiston gauge 11525500 July 30, 1924).

Recently project features have been designed (e.g., IC-2 in the Lower Junction City project) to maintain low flow drift boat passage - at the request of fishermen. However, navigability overall will vary over-time as it does in natural rivers.

See also responses to comment 23.M and Table 23M – Potential Impacts and Mitigation, included at the end of the responses to comment letter 23.

Comment 23.P.1 – Noise.

Noise management is discussed in the Master EIR in section 4.14 and in the Draft Bucktail and Lower Junction City EA/IS in section 3.14. Mitigation measures 4.14-1a, 4.14-1b, and 4.14-1c would be utilized in all proposed 2014 construction. Project appropriate noise mitigation measures have been implemented at channel rehabilitation construction areas to date. These mitigation measures ensure that project noise impacts are reduced to less than significant.

Comment 23.P.2 – Traffic.

Transportation and Traffic circulation are discussed in the Master EIR in section 4.16 and in section 3.16 of the Draft Bucktail and Lower Junction City EA/IS. Mitigation measures 4.16-2a, 4.16-4a, and 4.16-5a would be utilized in all proposed 2014 construction. Project appropriate traffic mitigation measures have been implemented at all channel rehabilitation construction projects to date. These measures ensure that project transportation impacts have been reduced to less than significant levels.

See also responses to comment 23.M. and Appendix Table 23.M, included at the end of the responses to comment letter 23.

Comment 23.Q – Turbidity.

Turbidity and TRRP project effects on Trinity River water quality are discussed on pages 4.5-6 through 4.5-8 of the Master EIR. Potential water quality impacts during and after project construction, and the mitigation measures required to reduce these impacts to less than significant, are included in impact and mitigation measures 4.5-1 and 4.5-2 from the Master EIR. Similarly, site specific turbidity impact

analyses and mitigation measures for water quality are included in section 3.5 of the Draft Bucktail and Lower Junction City EA/IS. Mitigation measures 4.5-1a, 4.5-1b, 4.5-1c, 4.5-1d, and 4.5-1e, and 4.5-2a, 4.5-2b, and 4.5-2c have been implemented at all channel rehabilitation construction areas since 2009 to minimize turbidity impacts. Implementation of these measures ensures that turbidity impacts to water quality are reduced to less than significant.

The impact of turbidity on the aesthetic values of recreationists is evaluated in the recreation section (4.8) of the Master EIR and section 3.8 of the Draft Bucktail Lower Junction City EA/IS. Implementation of mitigation measures 4.8-3a, 4.8-3b, 4.8-3c, 4.8-3d, and 4.8-3e in the Master EIR and 4.5-1a, 4.5-1b, 4.5-1c, 4.5-1d, and 4.5-1e in the Draft Bucktail Lower Junction City EA/IS ensure that turbidity impacts to recreation on the Trinity are reduced to less than significant.

Due to the nature of the proposed restoration activities and the clarity of the Trinity River during low flow conditions, the Regional Water Board has determined that an allowable zone of turbidity dilution is appropriate and necessary in order for Trinity River restoration activities to be accomplished in a meaningful, timely, and cost-effective manner that fully protects beneficial uses without resulting in a violation of the water quality objective for turbidity.

The Trinity River is typically very clear with natural background turbidity levels in the range of 0 to 1 nephelometric turbidity units (NTUs) during summer low flow conditions. Due to the very low background concentrations during the summer, turbidity levels immediately downstream of the most carefully planned and implemented in-channel restoration activities will likely be increased by more than 20 percent above background levels, and plumes extending downstream of restoration activities may be visible. However, short-term increases in turbidity levels that occur during permitted restoration activities are generally not considered to be biologically detrimental to aquatic organisms; they are short in duration and fish are able to move away from the activity area. In both low flow and high flow scenarios, as long as project related turbidity is limited in concentration and duration, impacts to aquatic life and beneficial uses are expected to be minimal in comparison to the long-term aquatic habitat benefits that these projects are designed to create.

TRRP projects monitor turbidity and slow or limit in-channel work activities to remain below the permitted threshold of 20 NTUs at 500 feet downstream from the disturbance causing activity. TRRP project turbidity measurements rarely exceed 20 NTUs (<1% of measurements) during construction. However, the extent of downstream sedimentation is a function of the instream flow velocity and particle size. For example, fine-grained sediments like silts and clays may be carried several thousand feet downstream while larger-sized sediments, like sands and gravels, tend to drop out of the water column more quickly. Given the clear nature of the Trinity River in the summer (background turbidity of approximately 1.0 NTU), disturbance of fine particle substrates may be noticeable well downstream from the activity area, but are generally within permit limits and short lived in duration.

During construction at the Lorenz Gulch Project in 2013 (NCRWQCB et al. 2013a), which also included work in Douglas City near the Highway 299 Bridge, the contractor collected field turbidity measurements in accordance with mitigation measure 4.5-1a and 4.5-1b in the Mitigation Monitoring and Reporting Program (MMRP) as required in the TRRP's general water quality certification Order R1-2010-0028 (the permit). This permit requires remedial actions to be implemented to reduce and maintain turbidity at or below 20 NTU immediately downstream of the designated 500 linear foot dilution zone. Though water clarity downstream of the project was sometimes clouded by in-river work, best management practices were always in place and the contractor was never out of compliance with the permit.

The commenter included a picture of a newly constructed wood habitat structure and floodplain at the Lowden Ranch channel rehabilitation project and asked if a clearcut along the Wild and Scenic Trinity River would be considered an enhancement of natural recreational and visual qualities. This area was not clearcut and a clearcut would not be considered an enhancement feature. In fact, the TRRP endeavors to save native vegetation wherever possible during construction (refer to activity O: Revegetation, in Chapter 2 of the Draft EA/IS). The area pictured in comment letter 23 includes a wood habitat structure in the foreground, secured by wood pilings that stabilize the habitat feature of carefully placed logs. In the background, a lowered floodplain is inundated more frequently under the ROD flow regime (vs. pre-project conditions) and provides slow water rearing habitat for juvenile salmonids at various flow releases from Lewiston dam (refer to activities B, C, and D: Construction of inundated surfaces, in Chapter 2 of the Draft EA/IS). These features both act to enhance natural conditions which will fully develop over time and which have made substantial changes that are seen in Figure 23.Q.1.



Figure 23.Q.1. Lowden Ranch Rehabilitation Project – April 2014. Photo retaken at the same location as that from page 12 of the commenter’s letter. The photo shows the wood habitat structures and lowered floodplain area three growing seasons post-project. Note the diverse riverine habitat that has developed overtime and the riparian vegetation that is just beginning to bud.

The construction of these features on the Trinity River is consistent with the Wild and Scenic Rivers Act as evaluated in Appendix B, Wild and Scenic River Section 7 Analysis and Determination, from the Master EIR. The wood habitat structure and lowered floodplain support natural and diverse conditions found in a free flowing river as well as the Outstandingly Remarkable Values (e.g., the anadromous fisheries) for which this stretch of the river was designated under the Wild and Scenic System. The picture in Figure 23.Q.1 was taken at the same location as the commenter's picture (see page 12 of comment letter 23) but on April 14, 2014. Though the picture is prior to leaf out for many of the trees, it is clear that riparian vegetation is colonizing the area and that post-project conditions have resulted in a dynamic and variable stretch of the river with enhanced fish habitat and native plant species. Since a primary objective of the Lowden Ranch project was to re-establish alluvial processes this goal has been met.

Refer to response to comment letters 21 and 22 for additional information on turbidity monitoring.

Comment 23.R - Noxious weeds.

Noxious weeds and their management are discussed in the Master EIR (regulatory framework section - chapter 3 and in chapter 4.7 - vegetation, wildlife, and wetlands) and in the Draft Bucktail and Lower Junction City EA/IS. Mitigation measures 4.7-13a, 4.7-13b, 4.7-13c, 4.7-13d, 4.7-13e, 4.7-13f, and 4.7-13-g have been implemented during all channel rehabilitation projects to date to ensure that new species of noxious weeds are not spread into the construction area from outside the projects. These measures ensure that noxious weed impacts are reduced to less than significant.

The TRRP contracted a survey of noxious weeds along the Trinity River restoration reach in 2006 (North State Resources 2007) after a single rehabilitation project had been built. This study revealed that common weeds (e.g., star thistle (*Centaurea solstitialis*), Himalayan blackberry (*Rubus discolor*), and dalmatian toadflax (*Linaria genistifolia*)) were ubiquitous throughout the river corridor. Site-specific botanical surveys have also been conducted prior to construction at all channel rehabilitation sites. These site-specific surveys corroborate the 2007 conclusion that weeds are widespread throughout proposed project areas before construction.

Given the abundant presence of weeds throughout the county on proposed rehabilitation sites and neighboring parcels; natural wind, river and animal transport of seeds; and a lack of cost-effective methods to maintain long-term weed free areas, the TRRP places its efforts in clearing rehabilitation sites of non-native vegetation and then replanting with native plant species that can resist subsequent invasion by weeds on their own. Intensive revegetation would occur at both the Bucktail and Lower Junction City Rehabilitation Sites.

The Program also prioritizes the removal of relatively rare weeds with the potential to become major pests in Trinity County or downriver in Humboldt County. The Program uses only manual techniques for weed removal as Trinity County resolutions have declared that the use of herbicides in Trinity County is a public nuisance and that Trinity County is an herbicide-free zone (NCRWQCB and USBR 2009). Some examples of targeted and removed invasive species are salt cedar (*Tamarix* sp.) from the Dark Gulch Project; and dyer's woad (*Isatis tinctoria*) and giant reed grass (*Arrundo donax*) from the Upper Junction City Project. These activities are either performed by the TRRP directly, during channel rehabilitation projects, or they are funded by the TRRP through agreements with partners and other local organizations. Additional treatment (manual removal) of dyer's woad would be completed during the Lower Junction City project as specified on page 118 of the Draft EA/IS.

See also responses to comment 23.M.

Comment 23.S - Agricultural water supplies.

The TRRP has restored dynamic river processes to the river via implementation of the ROD. To minimize impacts to holders of Trinity River water rights with facilities (e.g., wells) adjacent to the river, the TRRP and Trinity County implemented the potable water and sewage disposal assistance program to mitigate for effects on health and human safety. This Program assists land-owners who have had their potable water withdrawal systems or septic systems adversely affected by increased restoration (fishery) flow releases in the Trinity River flood plain (releases began in May 2006 for fishery restoration purposes). The Program has provided assistance to approximately 180 Trinity River landowners in mitigating damages to their water systems which were in place prior to the 2006 initiation of ROD flows.

Damage to agricultural water supplies was not included in this Program because these systems are temporary and typically installed annually. These systems may be removed during high flows or may need to be adjusted in length when changes in the channel occur due to natural or restoration flow events.

Refer also to responses to comment 23.M.

Comment 23.T.1 - Environmental documentation.

Refer to responses to comment 23.A.1 and comment 23.Y for information related to the adequacy of the environmental documentation.

Comment 23.T.2 - Channel rehabilitation designs.

Refer to responses to comment 23.A.2 and comment 23.D for information related to the consistency of channel rehabilitation actions with the ROD.

Comment 23.U - Adult salmonid holding habitat and pool filling.

A review of historical pool depth data indicates that the combination of higher flow releases from Lewiston Dam and reduced delivery of fine sediment from tributary watersheds has resulted in an increase in the depths of most natural pools in the Trinity River since the mid-20th Century (Gaeuman and Krause 2013). Results of recent sonar measurements indicate that the depths of most pools and deep runs increased between 2009 and 2011. Of 139 locations considered in this study, slightly more than half increased in depth over the study period. Significant depth decreases were observed in relatively few locations. In specific cases, those decreases appear to be linked to certain rehabilitation actions. In particular, terrace lowering at channel rehabilitation project sites was found to be associated with moderate to large depth decreases (Gaeuman and Krause 2013). Recent project designs (e.g., Upper Junction City and Lorenz Gulch) recognized these effects and were developed using iterative hydraulic modeling to ensure that the designs maintain stream power and sediment transport through pools, thereby safeguarding that channel modifications will not contribute to deposition in pools. A biologically-based study to determine the relation between pool depth and optimum pool habitat has not been conducted so changes in relative depth may not be indicative of changes in overall holding habitat that may include areas not associated with pools.

Deep pools are considered important holding habitat for adult spring-run and fall-run Chinook salmon of the Trinity River (Barnhart 1994). A lack of deep pools could be a limiting factor to adult salmon survival during spawning migrations, particularly for spring-run Chinook, as they typically rely on deep pools for holding habitat for a longer period of time compared to fall-run Chinook. However, relatively low pre-spawning mortality (PSM) for Trinity Chinook suggests that deep pool habitat is likely not limiting salmon production or is it a source of PSM. The present deep pool abundance and distribution in the Trinity River likely plays an important role in sustaining adult Chinook salmon in good condition during spawning migration. Data supporting this observation is collected by the California Department of Fish and Wildlife monitoring of adult female Chinook PSM on an annual basis since 1988. Based on counts of inspected female carcasses, PSM ranged from 1.1% to 49.9% with the highest levels in 1988 (49.9%),

1989 (31.3%), and 1995 (24.8%) (Table 23.U). In 2011, 4.87% of the 1,622 female spring Chinook carcasses evaluated were determined to be PSM. Based on analysis of survey data collected from 1988-2011, a mean value of 13% and a median value of 6% of female spring-run Chinook were indicated to be PSM (Figure 23.U.1). In 2011, 5.3% of the 3,387 female fall-run Chinook carcasses evaluated were determined to be PSM. Based on analysis of survey data collected from 1988-2011, a mean value of 9.0% and a median value of 6.0% of female fall-run Chinook were PSM (Figure 23.U.2). In addition, the data suggests that overall Chinook PSM is relatively low in the Trinity River when compared with PSM results obtained from other streams for spring-run Chinook (Clackamas 20%; middle fork Willamette 80%; and a range for Butte Creek of 4-65% PSM).

Table 23.U. Percent of Pre-spawn mortality (% Not Spawned) observed in sample counts or female Trinity River Chinook and coho salmon.

Study	Literature	Total Chinook			Coho salmon		
Year	Source	Spawned	Not Spawned	% Not spawned	Spawned	Not Spawned	% Not spawned
1955	Gibbs (1956)	2,076	32	1.5			
1956	Weber (1965)	3,438	219	6.0			
1963	LaFaunce (1965)	4,953	328	6.2			
1968	Rogers (1970)	1,494	124	7.7			
1969	Smith (1975)	1,889	23	1.2			
1970	Rogers (1973)	632	34	5.1			
1972	Miller (1972)	791	110	12.2			
1987	Stempel (1988)						
1988	Zuspan (1991)	490	399	44.9			
1989	Zuspan (1992a)	1,740	791	31.3			
1990	Zuspan (1992b)	180	27	13.0			
1991	Zuspan (1994)	184	2	1.1			
1992	Aguilar/Zuspan (1995)	181	4	2.2			
1993	Aguilar (1995)	295	17	5.4			
1994	Aguilar/Davis (1995)	582	14	2.3			
1995	Zuspan (1997)	11,213	3,705	24.8			
1996	Zuspan (1997)	2,301	132	5.4			
1997	Zuspan (1998)	1,754	62	3.4			
2000	Sinnen/Null (2002)	2,499	163	6.1	89	13	12.7
2001	Sinnen (2004)	1,290	120	8.5	236	22	8.5
2002	Sinnen/Currier (2004)	1,742	77	4.2	56	8	12.5
2003	Sinnen/Knechtle (2006)	8,699	950	9.8	210	39	15.7
2004	Sinnen/Currier (2005)	2,510	160	6.0	1,042	187	15.2
2005	Garrison (2006)	1,606	118	6.8	414	78	15.9
2006	Hill(2007)	1,619	48	3.0	288	31	9.7
2007	Hill (2008)	3,073	259	7.8	97	11	10.2
2008	Hill (2009)	1,604	110	6.4	154	22	12.5
2009	Hill (2010)	1,969	100	5.1	95	15	15.8
2010	Hill (2011)	1,859	160	8.6	353	52	14.7
2011	Hill (2013)	4,749	260	5.19	112	16	14.30
2012*	current study	2,821	102	3.49	80	23	22.33

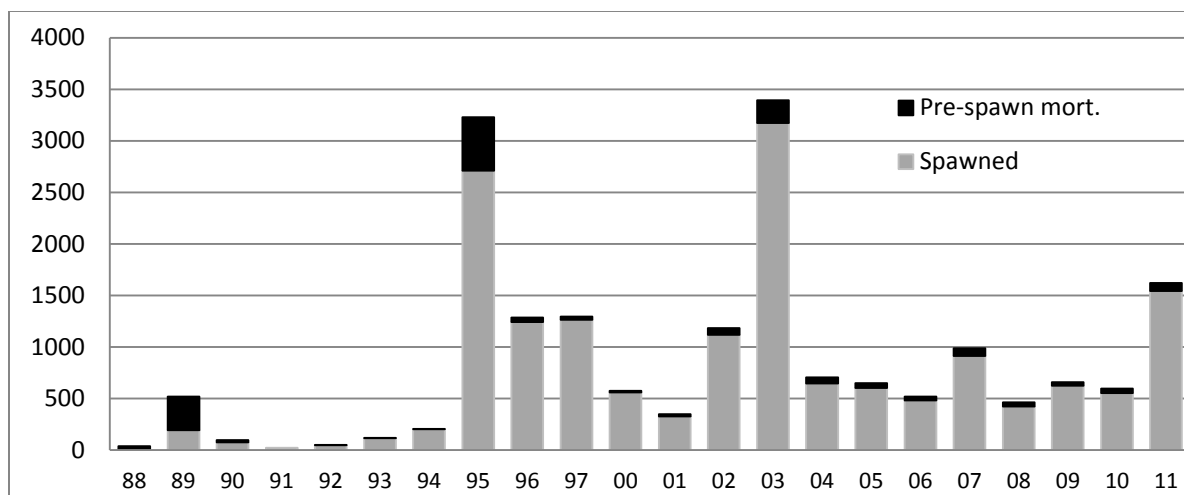


Figure 23.U.1. Counts of female spring-run Chinook carcasses showing pre-spawn mortality or spawned condition.

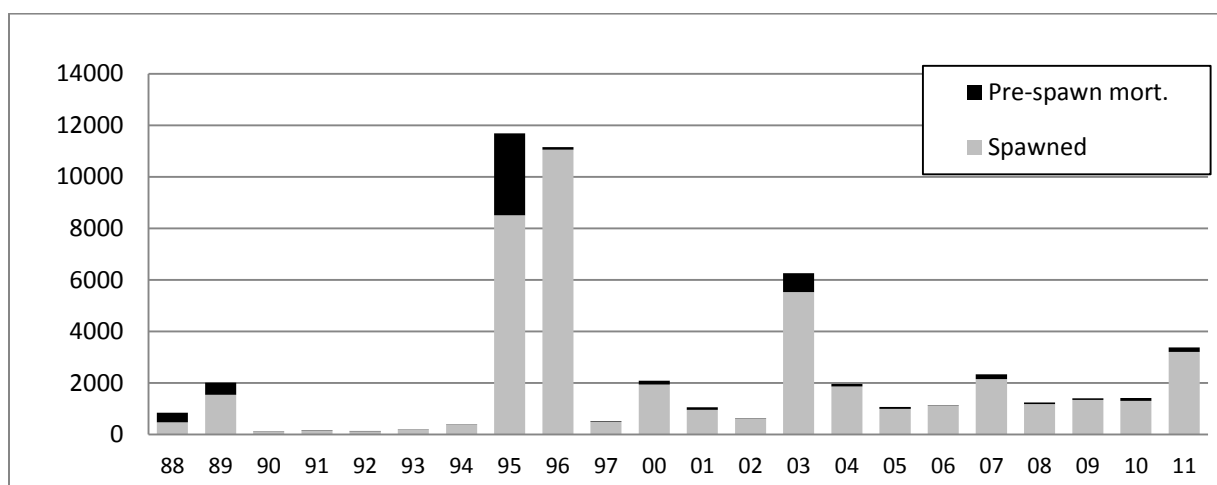


Figure 23.U.2. Counts of female fall-run Chinook carcasses showing pre-spawn mortality or spawned condition 1988-2011.

Comment 23.V – Bucktail Bridge Sequencing.

Refer to response to comment 23.E.

Comment 23.W – Less than required demonstrated success.

Refer to response to comment 23.B for a description of monitoring and project evaluation. Refer to response to comment 23.F for a discussion of adult salmon returns to the Trinity River.

Comment 23.X – Watershed alternative.

Refer to responses to comment 23.A.3 and comment 23.A.4.

Comment 23.Y – NMFS Biological Opinion.

Reclamation works closely with the National Marine Fisheries Service (NMFS), the agency responsible for implementing the Endangered Species Act (ESA) and ensuring protection and recovery of the

federally listed Southern Oregon-Northern California Coasts evolutionarily significant unit (ESU) of coho salmon, which inhabits the Trinity River. Both Reclamation and NMFS sit on the Trinity Management Council and their technical staffs are collaborators on project designs and permitting for project implementation. Consequently, the NMFS has been fully engaged in the adaptive management process and decisions that have guided implementation of the current projects, as well as required regulatory updates (e.g., supplemental analyses to the 2000 Biological Opinion on the Trinity River Mainstem Fishery Restoration Program; NMFS 2000) to ensure that implementation is lawful.

Recently Reclamation has begun to engage in informal technical consultation with the NMFS in order to update the 2000 Biological Opinion. In support of a formal re-consultation under Section 7 of the ESA and to obtain an updated Biological Opinion, Reclamation is currently preparing a new Biological Assessment that focuses on advances in and changes to actions associated with the TRRP Implementation Program since 2000 (i.e., the rationale for the continuing adaptation of techniques for channel rehabilitation and fine and coarse sediment management since program inception) that will be used by the NMFS as the information basis for writing their Biological Opinion. While the reinitiated Section 7 consultation is underway and a new Biological Opinion is in development, the 2000 Biological Opinion remains in effect.

The Trinity River restoration flows component of the TRRP will be excluded from this consultation because the fishery flows are part of a separate and currently ongoing consultation between the NMFS and Reclamation as part of the Long-term Operating Plan for the Central Valley Project/State Water Project.

Refer to responses to comment 23.A.1 for information related to the adequacy of TRRP environmental documentation. Refer to responses to comment 23.A.2 and comment 23.D for information related to the consistency of channel rehabilitation actions with the ROD.

Potential Impacts and Mitigation Identified in Comment 23.M.

Potential impacts identified in Comment 23.M are listed below (bold and underlined) and are coupled with their associated mitigation measures (Table 23.M). Mitigation measures are described for each potential impact in both the Master EIR (NCRWQCB and USBR 2009) and the Draft Bucktail and Lower Junction City EA/IS. These mitigation measures are requirements to be completed by Reclamation in order to reduce potential impacts to less than significance.

In general, Chapter 3 mitigation measures identified in the Draft EA/IS correspond to Chapter 4 mitigation measures in the Master EIR. Consequently, Master EIR numeric mitigation measure coding corresponds to mitigation measures that are numerically one integer less than in the Draft EA/IS. For example, Master EIR mitigation measure 4.3-2a corresponds to this document's Impact 3.3-2. While numerically different, the Appendix A mitigation measures in the Draft EA/IS, are meant to mitigate the same impacts as those identified in the Master EIR.

Table 23.M. Potential Impacts and Mitigation Identified in Comment 23.M.

<u>Impact 3.3-2. Construction activities associated with the Proposed Project could result in increased erosion and short-term sedimentation of the Trinity River.</u>	
4.3-2a	Reclamation will implement the following measures during construction activities: <ul style="list-style-type: none">• Areas where ground disturbance will occur will be identified in advance of construction and limited to only those areas that have been approved by Reclamation.• All vehicular construction traffic will be confined to the designated access routes and staging areas.• Disturbance will be limited to the minimum necessary to complete all rehabilitation activities.• All supervisory construction personnel will be informed of environmental concerns, permit conditions, and final project specifications.
4.3-2b	Reclamation will prepare an erosion and sedimentation control plan (SWPPP). Measures for erosion control will be prioritized based on proximity to the river. Reclamation will provide the SWPPP for review by associated agencies (e.g., BLM, the Regional Water Board, NMFS, and CDFW) upon request. Reclamation's project manager will ensure the preparation and implementation of an erosion and sediment control plan prior to the start of construction. The following measures will be used as a guide to develop this plan: <ul style="list-style-type: none">• Restore disturbed areas to pre-construction contours to the fullest extent feasible.• Salvage, store, and use the highest quality soil for revegetation.• Discourage noxious weed competition and control noxious weeds.• Clear or remove roots from steep slopes immediately prior to scheduled construction.• Leave drainage gaps in topsoil and spoil piles to accommodate surface water runoff.• To the fullest extent possible, cease excavation activities during significantly wet or windy weather.• Use bales, wattles, and/or silt fencing as appropriate.• Before seeding disturbed soils, work the topsoil to reduce compaction caused by construction vehicle traffic.• Rip feathered edges (and floodplain surfaces where appropriate) to approximately 18 inches deep. The furrowing of the river's edge will remove plant roots to allow mobilization of the bed, but will also intercept sediment before it reaches the waterway.• Spoil sites will be located such that they do not drain directly into a surface water feature, if possible. If a spoil site will drain into a surface water feature, catch basins will be constructed to intercept sediment before it reaches the feature. Spoil sites will be graded and vegetated to reduce the potential for erosion.• Sediment control measures will be in place prior to the onset of the rainy season to ensure that surface water runoff does not occur. Project areas will be monitored and maintained in good working condition until disturbed areas have been seeded and mulched or revegetated in another fashion. If work activities take place during the rainy season, erosion control structures will be in place and operational at the end of each construction day.
<u>Impact 3.5-1. Construction of the project could result in short-term, temporary increases in turbidity and total suspended solids levels during construction.</u>	
4.5-1a	The water quality objective for turbidity levels in the Trinity River, as listed in the Basin Plan for the North Coast Region (North Coast Regional Water Quality Control Board 2011), is summarized below. <ul style="list-style-type: none">• Turbidity levels will not be increased more than 20 percent above naturally occurring background levels. Allowable zones of dilution within which higher percentages can be tolerated may be defined for specific

	<p>discharges upon the issuance of discharge permits or waiver thereof.</p> <ul style="list-style-type: none"> Due to the nature of the proposed restoration activities and the clarity of the Trinity River during low flow conditions, the Regional Water Board has determined that an allowable zone of turbidity dilution is appropriate and necessary in order for Trinity River restoration activities to be accomplished in a meaningful, timely, and cost-effective manner that fully protects beneficial uses without resulting in a violation of the water quality objective for turbidity. Project activities that occur in areas outside of the active river channel will not increase turbidity levels by more than 20 percent above naturally occurring background levels. During in-river construction activities and until the first extended period of post-construction high flow (i.e., flows of at least 6,000 cfs inundate the project areas and floodplain for a minimum of 7 days) a zone of turbidity dilution within which higher percentages will be tolerated will be defined in discharge permits as the full width of the river channel within 500 linear feet downstream of any project activity that increases naturally occurring background levels, provided that all other required controls and appropriate BMPs for sediment and turbidity control are in place and downstream beneficial uses are also fully protected. When naturally occurring background levels are less than or equal to 20 NTUs, turbidity levels immediately downstream of the zone of turbidity dilution shall not exceed 20 NTUs. If naturally occurring background levels are greater than 20 NTUs, turbidity levels immediately downstream of the 500 linear foot zone of dilution shall not be increased by more than 20 percent above the naturally occurring background level.
4.5-1b	<p>To ensure that turbidity levels do not exceed the thresholds described above (4.4-1a) during in-river project construction activities, Reclamation shall monitor turbidity levels upstream within 50 feet of project activities (i.e., natural background) and 500 feet downstream of the in-river construction activities that could increase turbidity. At a minimum, field turbidity measurements shall be collected whenever a visible increase in turbidity is observed. Monitoring frequency shall be a minimum of every two hours during in-river work periods and when activities commence that are likely to increase turbidity levels above any previously monitored levels.</p> <p>If grab sample results indicate that turbidity levels exceed 20 NTU at 500 feet downstream from construction activities, remedial actions will be implemented to reduce and maintain turbidity at or below 20 NTU immediately downstream of the 500 linear foot zone of dilution. Potential remedial actions include halting or slowing construction activities and implementation of additional BMPs until turbidity levels are at or below 20 NTU.</p>
4.5-1c	<p>Fill gravels used on the streambeds, stream banks, and river crossings will be composed of washed, spawning-sized gravels from a local Trinity River Basin source. Gravel will be washed to remove any silts, sand, clay, and organic matter and will be free of contaminants such as petroleum products. Washed gravel will pass Caltrans cleanliness test #227 with a value of 85 or greater.</p>
4.5-1d	<p>Reclamation will prepare and implement a SWPPP that describes BMPs for the project, including silt fences, sediment filters, and routine monitoring to verify effectiveness. Proper implementation of erosion and sediment controls will be adequate to minimize sediment inputs into the Trinity River until vegetation regrowth occurs. All required controls and BMPs, including sediment and erosion control devices, will be inspected daily during the construction period to ensure that the devices are properly functioning. Excavated and stored materials will be kept in upland activity areas with erosion control properly installed and maintained. Excavated and stored materials will be staged in stable upland activity areas. All applicable erosion control standards will be required during stockpiling of materials.</p>
4.5-1e	<p>To minimize the potential for increases in turbidity and suspended sediments entering the Trinity River as a result of access routes (e.g., roads), Reclamation will implement the following protocols:</p> <ul style="list-style-type: none"> Keep bare soil to the minimum required by designs. Erosion control devices/measures will be applied to areas where vegetation has been removed as needed to reduce short-term erosion prior to the start of the rainy season. Keep runoff from bare soil areas well dispersed. Dispersing runoff keeps sediment on-site and prevents sediment delivery to streams. Direct any concentrated runoff from bare soil areas into natural buffers of vegetation or areas with more gentle slopes where sediment can settle out. Disconnect and disperse flow paths, including roadside ditches, that might otherwise deliver fine sediment to stream channels or other water bodies. Decompact or rip floodplain areas so that surfaces are permeable and no surface water runoff occurs.
<u>Impact 3.5-2. Construction of the project could result in short-term, temporary increases in turbidity and total suspended solids levels following construction.</u>	
4.5-2a	<p>Turbidity increases associated with project activities will not exceed the water quality objectives for turbidity in the Trinity River Basin (North Coast Regional Water Quality Control Board 2011).</p>
4.5-2b	<p>To ensure that turbidity levels do not exceed the threshold following construction, Reclamation will monitor turbidity and total suspended solids during and after representative rainfall events to determine the effect of the project on Trinity River water quality. At a minimum, field turbidity measurements will be collected whenever a visible increase in turbidity is observed.</p>

	<ul style="list-style-type: none"> • If increases in turbidity and total suspended solids are observed as a result of erosion from constructed features, field turbidity measurements will be collected 50 feet upstream of a point adjacent to the end of the feature and 500 feet downstream of the feature. • If the grab sample indicates that turbidity levels exceed the established thresholds identified in the Basin Plan, the Regional Water Board will be notified. The need to implement erosion control measures for turbidity that is expected to result from overland river flows (versus surface run-off) will be evaluated with Regional Water Board staff to determine if remediation measures are needed.
4.5-2c	<p>To reduce the potential for the access routes to continually contribute soil materials to the Trinity River following project construction, thereby increasing turbidity and total suspended solids in the river, these routes will be stabilized or decommissioned upon completion of work in those areas consistent with the requirements outlined in at the end of this appendix (Design Elements and Construction Criteria). Decommissioning is defined as removing those elements of a road that reroute hillslope drainage and present slope stability hazards.</p>
<p><u>Impact 3.5-3. Construction of the project could cause contamination of the Trinity River from hazardous materials spills.</u></p>	
4.5-3a	<p>Reclamation will prepare and implement a spill prevention and containment plan in accordance with applicable federal and state requirements.</p>
4.5-3b	<p>Reclamation will ensure that any construction equipment that will come in contact with the Trinity River be inspected daily for leaks prior to entering the flowing channel. External oil, grease, and mud will be removed from equipment using steam cleaning. Untreated wash and rinse water will be adequately treated prior to discharge if that is the desired disposal option.</p>
4.5-3c	<p>Reclamation will ensure that hazardous materials, including fuels, oils, and solvents, not be stored or transferred within 150 feet of the active Trinity River channel. Areas for fuel storage, refueling, and servicing will be located at least 150 feet from the active river channel or within an adequate secondary fueling containment area. Gas pumps and engines will be stored and maintained on impermeable barriers so that any leaking petroleum products are isolated from the ground. In addition, the construction contractor will be responsible for maintaining spill containment booms onsite at all times during construction operations and/or staging of equipment or fueling supplies. Fueling trucks will maintain a spill containment boom at all times.</p>
<p><u>Impact 3.5-5. Construction and maintenance of the project could result in the degradation of Trinity River beneficial uses identified in the Basin Plan.</u></p>	
<p>Water quality Mitigation Measures 4.5-1a-e, 4.5-2a-c, and 4.5-3a-c – listed above – provide measures to protect the beneficial uses of the Trinity River.</p>	
<p><u>Impact 3.6-1. Implementation of the project could result in effects on potential spawning and rearing habitat for anadromous fishes, including the federally and state-listed Coho salmon.</u></p>	
4.6-1a	<p>The proposed construction schedule avoids in-channel work during the period in which it could affect spawning spring- and fall-run Chinook salmon, coho salmon, and steelhead or their embryos once in the gravel. As directed by the 2000 Biological Opinion (National Marine Fisheries Service 2000), Reclamation will ensure that all in-channel construction activities are conducted during late-summer, low-flow conditions (e.g., July 15-September 15).</p>
4.6-1b	<p>Alluvial material used for coarse sediment additions will be composed of washed, spawning-sized gravels (3/8- to 5-inches diameter) from a local Trinity River Basin source. Gravel will be washed to remove any silts, sand, clay, and organic matter; will be free of contaminants, such as petroleum products; and will pass Caltrans cleanliness test #227 with a value of 85 or greater.</p>
<p><u>Impact 3.6-2. Implementation of the project could result in increased erosion and sedimentation that could adversely affect fishes, including the federally and state-listed Coho salmon.</u></p>	
4.6-2a	<p>The water quality objective for turbidity levels in the Trinity River, as listed in the Basin Plan for the North Coast Region (North Coast Regional Water Quality Control Board 2011), is summarized below.</p> <ul style="list-style-type: none"> • Turbidity levels shall not be increased more than 20 percent above naturally occurring background levels. Allowable zones of dilution within which higher percentages can be tolerated may be defined for specific discharges upon the issuance of discharge permits or waiver thereof. • Due to the nature of the proposed restoration activities and the clarity of the Trinity River during low flow conditions, the Regional Water Board has determined that an allowable zone of turbidity dilution is appropriate and necessary in order for Trinity River restoration activities to be accomplished in a meaningful, timely, and cost-effective manner that fully protects beneficial uses without resulting in a violation of the water quality objective for turbidity. • Project activities that occur in areas outside of the active river channel will not increase turbidity levels by more than 20 percent above naturally occurring background levels. During in-river construction activities and until the first extended period of post-construction high flow (i.e., flows of at least 6,000 cfs inundate the project areas and floodplain for a minimum of 7 days) a zone of turbidity dilution within which higher

	percentages will be tolerated will be defined in discharge permits as the full width of the river channel within 500 linear feet downstream of any project activity that increases naturally occurring background levels, provided that all other required controls and appropriate BMPs for sediment and turbidity control are in place and downstream beneficial uses are also fully protected. When naturally occurring background levels are less than or equal to 20 NTUs, turbidity levels immediately downstream of the zone of turbidity dilution shall not exceed 20 NTUs. If naturally occurring background levels are greater than 20 NTUs, turbidity levels immediately downstream of the 500 linear foot zone of dilution shall not be increased by more than 20 percent above the naturally occurring background level.
4.6-2b	To ensure that turbidity levels do not exceed the thresholds described above (4.6-2a) during in-river project construction activities, Reclamation shall monitor turbidity levels upstream within 50 feet of project activities (i.e., natural background) and 500 feet downstream of the in-river construction activities that could increase turbidity. At a minimum, field turbidity measurements shall be collected whenever a visible increase in turbidity is observed. Monitoring frequency shall be a minimum of every two hours during in-river work periods and when activities commence that are likely to increase turbidity levels above any previously monitored levels. If grab sample results indicate that turbidity levels exceed 20 NTU at 500 feet downstream from construction activities, remedial actions will be implemented to reduce and maintain turbidity at or below 20 NTU immediately downstream of the 500 linear foot zone of dilution. Potential remedial actions include halting or slowing construction activities and implementation of additional BMPs until turbidity levels are at or below 20 NTU.
4.6-2c	Fill gravels used on the streambeds, stream banks, and river crossings will be composed of washed, spawning-sized gravels from a local Trinity River Basin source. Gravel will be washed to remove any silts, sand, clay, and organic matter and will be free of contaminants such as petroleum products. Washed gravel will pass Caltrans cleanliness test #227 with a value of 85 or greater.
4.6-2d	Reclamation will prepare and implement a SWPPP that describes BMPs for the project, including silt fences, sediment filters, and routine monitoring to verify effectiveness. Proper implementation of erosion and sediment controls will be adequate to minimize sediment inputs into the Trinity River until vegetation regrowth occurs. All required controls and BMPs, including sediment and erosion control devices, will be inspected daily during the construction period to ensure that the devices are properly functioning. Excavated and stored materials will be kept in upland activity areas with erosion control properly installed and maintained. Excavated and stored materials will be staged in stable upland activity areas. All applicable erosion control standards will be required during stockpiling of materials.
4.6-2e	To minimize the potential for increases in turbidity and suspended sediments entering the Trinity River as a result of access routes (e.g., roads), Reclamation will implement the following protocols: <ul style="list-style-type: none"> • Keep bare soil to the minimum required by designs. Erosion control devices/measures will be applied to areas where vegetation has been removed to reduce short-term erosion prior to the start of the rainy season. • Keep runoff from bare soil areas well dispersed. Dispersing runoff keeps sediment on-site and prevents sediment delivery to streams. Direct any concentrated runoff from bare soil areas into natural buffers of vegetation or areas with more gentle slopes where sediment can settle out. • Disconnect and disperse flow paths, including roadside ditches, that might otherwise deliver fine sediment to stream channels. • Decomact or rip floodplain areas so that surfaces are permeable and no surface water runoff occurs.
<u>Impact 3.6-3. Construction activities associated with the project could potentially result in the accidental spill of hazardous materials that could adversely affect fishes, including the federally and state-listed Coho salmon.</u>	
4.6-3a	Construction specifications will include the following measures to reduce potential impacts associated with accidental spills of pollutants (fuel, oil, grease, etc.) on vegetation and aquatic habitat resources within the project boundary: <ul style="list-style-type: none"> • Equipment and materials will be stored away from wetland and surface water features. • Vehicles and equipment used during construction will receive proper and timely maintenance to reduce the potential for mechanical breakdowns leading to a spill of materials. Maintenance and fueling will be conducted in an area at least 150 feet away from waters of the Trinity River or within an appropriate secondary fueling containment area. Gasoline engines and pumps operated on the floodplain will be isolated from the ground by an impermeable barrier. • The contractor will develop and implement site-specific BMPs, a water pollution control plan, and emergency spill control plan. The contractor will be responsible for immediate containment and removal of any toxins released.
<u>Impact 3.7-1. Construction activities associated with the project could result in the loss of jurisdictional waters including wetlands.</u>	
4.7-1a	Prior to the start of construction activities, Reclamation will retain a qualified biologist to identify potential

	<p>construction access routes to ensure that these features avoid and/or minimize to the fullest extent impacts to jurisdictional waters. In addition, Reclamation will clearly identify, and flag in the field, biologically sensitive areas (e.g., jurisdictional waters and riparian habitat) to be protected, and will provide the contractor with specific instructions to avoid any construction activity within these features. Reclamation will inspect and maintain marked areas on a regular basis throughout the construction phase.</p>
4.7-1b	<p>Reclamation will continue to implement the Riparian Revegetation and Monitoring Plan during Proposed Project implementation. The plan acknowledges that the ultimate goals of the TRRP include enhancement and maintenance of functional riparian habitat and no net loss of riparian habitat and jurisdictional wetlands both within channel rehabilitation site boundaries and generally throughout the 40-mile reach of the Trinity River below the TRD.</p>
4.7-1c	<p>Reclamation will initiate a 10-year mitigation monitoring program after the first growing season following project implementation. Monitoring and maintenance of planted vegetation will take place in the first several years after planting. After a period of 5 years, the need for additional riparian habitat and wetland enhancement will be evaluated in a written report. At that time, Reclamation, in consultation with the USACE, Regional Water Board, and CDFW, will determine whether there is a need to further enhance or create additional areas of riparian habitat or jurisdictional wetlands within the project boundary so that there will be no net loss of wetlands at the end of a 5 year period and no net loss of riparian habitat after a 10-year monitoring period. In addition, wetlands will be re-delineated 5 years after project implementation to ensure no net loss of wetland habitat. Riparian habitat reporting 5 years after planting and wetland delineation 5 years after project implementation will provide Reclamation with needed data in a timely fashion to take additional pro-active measures towards meeting the goals of no net loss of riparian habitat and jurisdictional wetlands within boundaries established for TRRP rehabilitation sites after 10 years.</p>
<p><u>Impact 3.7-4. Construction activities associated with the project could result in impacts to the state-listed little willow flycatcher.</u></p>	
4.7-4a	<p>Prior to the start of construction, a qualified biologist will conduct a survey of the rehabilitation sites to determine whether suitable nesting habitat for the little willow flycatcher is present. If suitable habitat is present, Mitigation Measure 4.7-4b will be implemented.</p>
4.7-4b	<p>Grading and other construction activities will be scheduled to avoid the nesting season to the extent possible. The nesting season for this species in Trinity County extends from June 1 through July 31. If construction occurs outside of the breeding season, no further mitigation is necessary. If the breeding season cannot be completely avoided, Mitigation Measures 4.7-4c and 4.7-4d will be implemented.</p>
4.7-4c	<p>A qualified biologist will conduct a minimum of one pre-construction survey for the little willow flycatcher within the rehabilitation sites and a 250-foot buffer around the sites. The survey will be conducted no more than 15 days prior to the initiation of construction in any given area. The pre-construction survey(s) will be used to ensure that no nests of this species within or immediately adjacent to the rehabilitation site will be disturbed during project implementation. To the extent possible given timing for construction and with the contract award, pre-construction surveys will conform to methodologies identified in a Willow Fly Catcher Survey Protocol for California available online at: http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html#Birds . If an active nest is found, CDFW will be contacted prior to the start of construction to determine the appropriate mitigation measures.</p>
4.7-4d	<p>If vegetation is to be removed by the projects and all necessary approvals have been obtained, potential nesting substrate (e.g., shrubs and trees) that will be removed by the projects will be removed before the onset of the nesting season, if feasible. This will help preclude nesting and substantially decrease the likelihood of direct impacts.</p>
<p><u>Impact 3.7-5. Construction activities associated with the project could result in impacts to foothill yellow-legged frog.</u></p>	
4.7-5a	<p>If any construction in the Trinity River channel will occur prior to August 1 of any construction season, a pre-construction survey for the foothill yellow-legged frog larvae and/or eggs will be conducted by a qualified biologist. This survey will be conducted within the construction boundary no more than 2 weeks prior to the start of in-stream construction activities. If larvae or eggs are detected, the biologist will relocate them to a suitable location outside of the construction boundary.</p>
4.7-5b	<p>In the event that a foothill yellow-legged frog is observed within the construction boundary, the contractor will temporarily halt in-stream construction activities until qualified personnel have moved the frog(s) to a safe location within suitable habitat outside of the construction limits. Planned locations for placement of transferred animals will be downstream of the construction limits and will be reported to the CDFW prior to construction.</p>
4.7-5c	<p>Mitigation measures identified in Section 3.5 (Water Quality) of the EA/IS for addressing erosion and sedimentation and accidental spills will be fully implemented to mitigate for potential indirect impacts to dispersal habitat for the foothill yellow-legged frog due to sedimentation and accidental spills.</p>
4.7-5d	<p>Mitigation measures associated with the disturbance to riparian habitat (Mitigation Measures 4.7-1a, 4.7-1b, and 4.7-1c) will be fully implemented.</p>

<u>Impact 3.7-6. Construction activities associated with the project could result in impacts to western pond turtle.</u>	
4.7-6a	A minimum of one survey for western pond turtle nests will be conducted during the nesting season (generally late June-July) prior to construction. A qualified biologist will be retained by Reclamation to conduct the survey. If a western pond turtle nest is found, the biologist will flag the site and determine whether construction activities can avoid affecting the nest. If the nest cannot be avoided, the nest will be excavated by the biologist and reburied at a suitable location outside of the construction limits.
4.7-6b	Prior to construction in open water habitat, a qualified biologist will trap and move western pond turtles out of the construction area to nearby suitable habitats.
4.7-6c	During construction, in the event that a western pond turtle is observed within the construction limits, the contractor will temporarily halt construction activities until qualified personnel have moved the turtle(s) to a safe location within suitable habitat outside of the construction limits. Planned locations for placement of transferred animals will be downstream of the construction limits and will be reported to the CDFW prior to construction.
4.7-6d	Mitigation measures presented in Section 4.5 (Water Quality) for addressing erosion and sedimentation and accidental spills will be fully implemented to mitigate for the potential indirect impacts to potential dispersal habitat due to sedimentation and accidental spills.
4.7-6e	The mitigation measure associated with the disturbance to riparian habitat (Mitigation Measures 4.7-1a, 4.7-1b, and 4.7-1c) will be fully implemented.
<u>Impact 3.7-7. Construction activities associated with the project could result in impacts to nesting Vaux's swift, California yellow warbler, and yellow-breasted chat.</u>	
4.7-7a	Prior to the start of construction, a qualified biologist will conduct surveys of the rehabilitation sites to determine whether suitable nesting habitat for the species is present. If suitable habitat is present, Mitigation Measure 4.7-7b will be implemented.
4.7-7b	Grading and other construction activities will be scheduled to avoid the nesting season for these species to the extent possible. The nesting season for these species in Trinity County extends from March 15 through July 31. If construction occurs outside the breeding season, no further mitigation is necessary. If construction during the breeding season cannot be completely avoided, Mitigation Measures 4.7-7c and 4.7-7d will be implemented.
4.7-7c	A qualified biologist will conduct a minimum of one preconstruction survey for these species within the rehabilitation sites and a 250-foot buffer around the sites. The survey will be conducted no more than 15 days prior to the initiation of construction in any given area. The preconstruction surveys will be used to ensure that no nests of these species within or immediately adjacent to the rehabilitation sites will be disturbed during project implementation. If an active nest is found, a qualified biologist will determine the extent of a construction-free buffer zone to be established around the nest.
4.7-7d	If vegetation is to be removed by the project and all necessary approvals have been obtained, potential nesting habitat (e.g., shrubs and trees) that will be removed by the projects will be removed before the onset of the nesting season, if feasible. This will help preclude nesting and substantially decrease the likelihood of direct impacts.
<u>Impact 3.7-8. Construction activities associated with the project could result in impacts to nesting bald eagle and northern goshawk.</u>	
Due to the removal of the bald eagle from the endangered species list, and the availability of the National Bald Eagle Management Guidelines provided by the US Fish and Wildlife Service to protect the bald eagle, additional measures are outlined below for the bald eagle within the Mitigation Monitoring and Reporting Program for the 2014 Draft Environmental Assessment/Initial Study. These measures are now stricter than those outlined in the 2009 Master EA, and provide additional protections for the bald eagle to abide by directives within the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d):	
4.7-8a	Prior to the start of construction, a qualified biologist will conduct a survey of the rehabilitation sites to determine whether suitable habitat for the species is present. If suitable habitat is present, Mitigation Measure 4.7-8b will be implemented.
4.7-8b	Construction will be scheduled to avoid the nesting season for bald eagles and northern goshawks to the extent feasible. The nesting season for most raptors in Trinity County extends from February 15 through July 31. Thus, if construction can be scheduled to occur between August 1 and February 14, the nesting season will be avoided and no impacts to nesting bald eagles and northern goshawks will be expected. If it is not possible to schedule construction during this time, mitigation measures 4.7-8c and 4.7-8d will be implemented.
4.7-8c	Pre-construction surveys for bald eagles and nesting northern goshawks will be conducted by a qualified biologist to ensure that no disturbance will occur during project implementation. These surveys will be conducted no more than 14 days prior to the initiation of construction activities. The biologist will conduct surveys immediately adjacent to the impact areas for bald eagles and northern goshawk nests. If eagles or an active nest are found within 500 feet of the construction areas to be disturbed by these activities, the

	biologist, in consultation with the CDFW and the National Bald Eagle Management Guidelines, will determine the extent of a construction-free buffer zone to be established..
4.7-8d	If vegetation is to be removed as part of the project and all necessary approvals have been obtained, potential nesting habitat (i.e., trees) that will be removed by the projects will be removed before the onset of the nesting season, if feasible. This will help preclude nesting and substantially decrease the likelihood of direct impacts. Directives under the Bald and Golden Eagle Management Protection Act will be adhered to.
<u>Impact 3.7-9. Construction activities associated with the project could result in impacts to special status bats and the ring-tailed cat.</u>	
4.7-9a	Pre-construction surveys for roosting bats and ring-tailed cats will be conducted prior to the start of construction activities. The surveys will be conducted by a qualified biologist. No activities that will result in disturbance to active roosts of special status bats or dens of ring-tailed cats will proceed prior to completion of the surveys. If no active roosts or dens are found, no further action is needed. Because bats are known to abandon young when disturbed, if a maternity roost is located, a qualified bat biologist will determine the extent of a construction-free zone to be implemented around the roost. If a bat maternity roost or hibernaculum is present, or a ring-tailed cat den is present, Mitigation Measures 4.7-9b and/or 4.7-9c will be implemented. CDFW will also be notified of any active bat nurseries within the disturbance zones.
4.7-9b	If an active maternity roost or hibernaculum is found, the projects will be redesigned to avoid the loss of the tree or structure occupied by the roost, if feasible. If the projects cannot be redesigned to avoid removal of the structure, demolition of that structure will commence before bat maternity colonies form (i.e., prior to March 1) or after young are volant (flying) (i.e., after July 31). The disturbance-free buffer zones described above will be observed during the bat maternity roost season (March 1–July 31). If a non-breeding bat hibernaculum is found in a tree or structure to be razed, the individuals will be safely evicted under the direction of a qualified bat biologist, by opening the roosting area to allow air to flow through the cavity. Demolition will then follow no sooner than the following day (i.e., there will be no less than one night between initial disturbance for air flow and the demolition). This action will allow bats to leave during dark hours, thus increasing their chance of finding new roosts with a minimum of potential predation during daylight. Trees with roosts that need to be removed will first be disturbed at dusk, just prior to removal that same evening, to allow bats to escape during the darker hours.
4.7-9c	Ring-tailed cats are fully protected species under Fish and Game Code Section 4700. Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research. If an active ring-tailed cat nest is found, the projects will be redesigned to avoid the loss of the tree occupied by the nest if feasible. If the projects cannot be redesigned to avoid removal of the occupied tree, the CDFW will be contacted for their input. If approved by CDFW, demolition of the tree will commence outside of the breeding season (February 1 to August 30). If a non-breeding den is found in a tree scheduled to be removed, prior to disturbance, the CDFW will be notified to review and approve proposed procedures to ensure that no take occurs as a result of the action. Trees with dens that need to be removed will first be disturbed at dusk, just prior to removal that same evening, to allow ring-tailed cats to escape during the darker hours.
<u>Impact 3.7-13. Implementation of the project could result in the spread of non-native and invasive plant species.</u>	
4.7-13a	When using imported erosion control materials (as opposed to rock and dirt berms), use only certified weed-free materials, mulch, and seed.
4.7-13b	Preclude the use of rice straw in riparian areas.
4.7-13c	Limit any import or export of fill to materials to those that are known to be weed free.
4.7-13d	Ensure all construction equipment is thoroughly washed prior to entering and leaving the worksite. Equipment will be inspected to ensure that it is free of plant parts as well as soils, mud, or other debris that may carry weed seeds.
4.7-13e	Use a mix of native grasses, forbs, and non-persistent non-native species for seeding disturbed areas that are subject to infestation by non-native and invasive plant species. Where appropriate, a heavy application of mulch will be used to discourage introduction of these species. Use of planting plugs of native grass species may also be used to accelerate occupation of disturbed sites and increase the likelihood of reestablishing a self-sustaining population of native plant species.
4.7-13f	Within the first 3 to 5 years post-project, if it is determined that the project has caused non-native invasive vegetation to out-compete desired planted or native colonizing riparian vegetation, opportunities to control these non-native species will be considered. When implementing weed control techniques, the approach will consider using all available control methods known for a weed species.
4.7-13g	Within the first 3 to 5 years post-project, if it is determined that on-site revegetation/post-project conditions do not meet landowner requirements, opportunities to revisit the site and remedy the concern will be considered.

<u>Impact 3.8-1. Construction associated with the project could disrupt recreation activities, such as boating, fishing, and swimming, in the Trinity River.</u>	
4.8-1a	Reclamation shall provide precautionary signage to warn recreational users of the potential safety hazards associated with project construction activities. Signs and/or buoys shall be placed within and directly adjacent to the project boundaries along the Trinity River in accordance with the requirements specified in Title 14, Article 6 of the California Code of Regulations. Notification signs shall be posted at public river access areas located within the project area and managed by BLM. Additionally, public notification of proposed project construction activities and associated safety hazards shall be circulated in the local <i>Trinity Journal</i> newspaper prior to the onset of project construction.
4.8-1b	Reclamation will repair and/or replace any facilities associated with the Proposed Project that are impacted by project activities. This measure includes installation of interpretive signage consistent with the requirements of the BLM. Preconstruction meetings between Reclamation and landowners/land managers will identify the amount of vegetative screening to be retained at each recreation site within the project area.
<u>Impact 3.8-2. Construction of the project could result in an increased safety risk to recreational users or resource damage to recreational lands within the project boundaries.</u>	
Implementation of Mitigation Measures 4.8-1a-b, which provides precautionary signage and/or buoys adjacent to project boundaries and public notice at river access sites, would make this impact less than significant.	
<u>Impact 3.8-3. Construction activities associated with the project could lower the Trinity River's aesthetic value for recreationists by increasing its turbidity.</u>	
Mitigation measures 4.5-1a, 4.5-1b, 4.5-1c, 4.5-1d, and 4.5-1e described above for impact 3.5-1 would reduce impacts to less than significant.	
<u>Impact 3.12-1. Implementation of the project could result in the degradation and/or obstruction of a scenic view from key observation areas.</u>	
Mitigation Measures 4.7-1a, 4.7-1b, and 4.7-1c (Vegetation, Wildlife, and Wetlands – listed above), which generally describes the Riparian Revegetation and Monitoring Plan that is required, will be implemented where applicable. The plan acknowledges that the ultimate goals of the TRRP include enhancement and maintenance of functional riparian habitat and no net-loss of riparian habitat and jurisdictional wetlands both within channel rehabilitation site boundaries and generally throughout the 40-mile reach of the Trinity River below the TRD. Visual impacts related to water quality (i.e., the potential for increased turbidity to adversely affect the aesthetic quality of the river) will be mitigated through implementation of mitigation measures 4.5-1a, 4.5-1b, 4.5-1c, 4.5-1d, and 4.5-1e described above for impact 3.5-1.	
<u>Impact 3.14-1. Construction activities associated with the proposed project would result in noise impacts to nearby sensitive receptors.</u>	
4.14-1a	Construction activities near residential areas will be scheduled between 7:00 a.m. and 7:00 p.m., Monday through Saturday. No construction activities will be scheduled for Sundays or other hours and days established by the local jurisdiction (i.e., Trinity County). The contractor may submit a request for variances in construction activity hours, as needed.
4.14-1b	Reclamation will require that all construction equipment be equipped with manufacturer's specified noise muffling devices.
4.14-1c	Reclamation will require placement of all stationary noise-generating equipment as far away as feasibly possible from sensitive noise receptors or in an orientation minimizing noise impacts (e.g., behind existing barriers, storage piles, unused equipment).
<u>Impact 3.15-3. Implementation of the project could result in disruption to emergency services, school bus routes, or student travel routes during construction activities.</u>	
4.15-3a	Reclamation will require that staging and construction work, including temporary road or bridge closures occurs in a manner that allows for access by emergency service providers.
4.15-3b	Reclamation will provide 72-hour notice to the local emergency providers and affected users prior to the start of temporary closures.
4.15-3c	Reclamation will coordinate road closures occurring during the school year (mid-August through mid-June) with the appropriate school districts to avoid disruption of school attendance and student access to bus service.
<u>Impact 3.16-2. Construction activities would generate short-term increases in vehicle trips.</u>	
4.16-2a	Reclamation will post signs during gravel haul activities notifying travelers of trucks entering the roadway. Reclamation will ensure that the gravel trucks maintain a speed limit of 15 mph on residential roads and private roads and operate only between the hours of 7 a.m. and 7 p.m., Monday through Saturday.
<u>Impact 3.16-4. Construction activities would increase wear and tear on local roadways.</u>	
4.16-4a	Reclamation will perform a pre-construction survey of local federal and state roads to determine the existing roadway conditions of the construction access routes, and will consult with the relevant agencies/private

<p>parties about road conditions prior to construction activity and post construction activity. An agreement will be entered into prior to construction that will detail the pre-construction conditions and post-construction requirements for potential roadway rehabilitation.</p>
<p>Impact 3.16-5. Construction activities could pose a safety hazard to motorists, bicyclists, pedestrians, and equestrians.</p>
<p>4.16-5a Reclamation will prepare and implement a traffic control plan that will include provision and maintenance of temporary access through the construction zone, reduction in speed limits through the construction zone, signage and appropriate traffic control devices, illumination during hours of darkness or limited visibility, use of safety clothing/vests to ensure visibility of construction workers by motorists, and fencing as appropriate to separate bicyclists, pedestrians, and equestrians from construction activities. Reclamation will obtain encroachment permits from the appropriate entities to work within road easements. These permits will require traffic control and signage to meet California state standards.</p>

References Cited in Response to Comments

- AECOM. 2014. Cultural Resources Inventory for the Upper and Lower Junction City Segments for Phase II of the Trinity River Restoration Program.
- Barnhart, R.A. 1994. Salmon and steelhead populations of the Klamath-Trinity Basin, California. Pp. 73-97. In: T.J. Hassler (ed.). Klamath Basin Fisheries Symposium. Humboldt State University. Arcata, CA.
- Caltrans. 2004. *Bridge Design Specifications*. California Department of Transportation, Office of Technical Publications and Graphic Services, Sacramento, CA. February.
- Caltrans. 2013. Structure maintenance and investigations. California Department of Transportation. <http://www.dot.ca.gov/hq/structur/strmaint/local/localbrlist.pdf>
- Carper, M. 2014. Bureau of Reclamation Archaeologist, pers. Communication. January.
- Cardno Entrix and CH2MHill. 2011. Trinity River Large Wood Analysis and Recommendation Report. Report to the U.S. Bureau of Reclamation, Trinity River Restoration Program.
- Chamberlain, C. D., S. Quinn, and W. Matilton. 2012. Distribution and abundance of Chinook salmon redds in the mainstem Trinity River 2002 to 2011. U.S. Fish and Wildlife Service. Arcata Fish and Wildlife Office, Arcata Fisheries Technical Report TR 2012-16, Arcata, California
- CH2MHill. 2012. Bucktail Bridge- hydraulic conditions and scour evaluation. November 2012 final technical memorandum to the Trinity River Restoration Program.
- CH2MHill. 2013. Trinity River bridge on Brown's Mountain Road (05C-0207). Preliminary construction cost estimate. Initial PS& E submittal prepared for Bureau of Reclamation.
- Connor, W. P., and A. P. Garcia. 2006. Prespawning movement of wild and hatchery fall Chinook salmon adults in the Snake River. Transactions of the American Fisheries Society, 135:2, 297-305, DOI: 10.1577/T05-097.1
- Cox, Isaac. 1852 *The Annals of Trinity County*. Commercial Book and Job Steam Printing Establishment, 1858 – Trinity County (Calif.)
- Department of Water Resources. 2012. *Trinity River Flood Insurance Study HEC-RAS Model*. California Department of Water Resources Northwest Region Office
- Gaeuman D, and A. Krause. 2013. Assessment of pool depth changes in the Trinity River between Lewiston Dam and the North Fork Trinity River. Technical Report: TR-TRRP-2013-1, U.S. Bureau of Reclamation, Trinity River Restoration Program, Weaverville, CA.
- Gaeuman, D. 2013. 2012 Sediment Budget Update, Trinity River, Lewiston Dam to Douglas City, California. Technical Report TR-TRRP-2013-2. U.S. Department of Reclamation, Trinity River Restoration Program, Weaverville, CA.
- Graham Matthews and Associates. 2010. Trends in substrate composition of the Trinity River, 1991-2009. Report to the Trinity River Restoration Program. <http://odp.trrp.net/Data/Documents/Details.aspx?document=439>

- Hoopa Valley Tribe, McBain and Trush, and Northern Hydrology and Engineering. 2011. Channel rehabilitation and design guidelines for the mainstem Trinity River. Technical report to the Trinity River Restoration Program.
<http://odp.trrp.net/Data/Documents/Details.aspx?document=627>
- Kucera, P., and R. Orme. 2006. Chinook salmon (*Oncorhynchus tshawytscha*) adult abundance monitoring in the Secesh River and Lake Creek, Idaho, 2005 Annual Report, Project No. 199703000, 106 electronic pages, (BPA Report DOE/BP-00020615-1).
- Lloyd, D. S. 1985. Turbidity in freshwater habitats of Alaska: A review of published and unpublished literature relevant to the use of turbidity as a water quality standard. Alaska Department of Fish and Game. (Report No. 85-1.)
- Martin, A., D.H. Goodman and J. Alvarez. 2012. Estimation of rearing habitat area for age-0 Chinook and coho salmon during winter base flows within the Sawmill Rehabilitation Site of the Upper Trinity River, 2010. Yurok Tribal Fisheries Program, Willow Creek, CA. U.S. Fish and Wildlife Service Arcata Fisheries Data Series Report Number DS 2012-26.
- Martin, A., D.H. Goodman and J. Alvarez. 2014 in process. Internal DRAFT Rehabilitation site assessment 2013: Sawmill. Yurok Tribal Fisheries Program, Willow Creek, CA. U.S. Fish and Wildlife Service Arcata Fisheries Data Series Report.
- National Marine Fisheries Service. 2000. Biological opinion on the Trinity River Mainstem Fishery Restoration Program. United States Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service. (File Number 151422WR2000AR8271:FR.)
- North Coast Regional Water Quality Control Board and U.S. Bureau of Reclamation. 2009. Channel rehabilitation and sediment management for remaining Phase 1 and Phase 2 sites. Master environmental impact report, environmental assessment/ environmental impact report. Trinity River Restoration Program. August 2009. SCH#2008032110.
- North Coast Regional Water Quality Control Board, U.S. Bureau of Reclamation and U.S. Bureau of Land Management. 2013a. Trinity River Channel Rehabilitation Sites: Douglas City (River Mile 93.6-94.6) and Lorenz Gulch (River Mile 89.4-90.2) environmental assessment/ initial study. Trinity River Restoration Program. March 2013. SCH#2013032030
- North Coast Regional Water Quality Control Board, U.S. Bureau of Reclamation and U.S. Bureau of Land Management. 2013b. Trinity River Channel Rehabilitation Sites: Bucktail (River Mile 105.3-106.4) and Lower Junction City (River Mile 78.8-79.8). Environmental assessment/ initial study. Trinity River Restoration Program. SCH#2013122030
- North State Resources. 2007. Distribution and applied management of invasive plant species at proposed rehabilitation sites along the mainstem of the Trinity River. Report to the U.S. Bureau of Reclamation, Trinity River Restoration Program.
- Pacific Fishery Management Council. 2013. Preseason Report I: Stock Abundance Analysis and Environmental Assessment Part 1 for 2013 Ocean Salmon Fishery Regulations.
- Science Advisory Board. Draft 2013. Draft Review of the Trinity River Restoration Program's Channel Rehabilitation Strategy, Phase 1.

- Science Advisory Board. Draft 2013. Draft Review of the Trinity River Restoration Program's Channel Rehabilitation Strategy, Phase 1 – Appendix A: High level indicators.
- Science Advisory Board. Draft 2013. Draft Review of the Trinity River Restoration Program's Channel Rehabilitation Strategy, Phase 1 – Appendix C: Review of the Trinity River restoration program's phase 1 channel rehabilitation projects.
- Science Advisory Board. Draft 2013. Draft Review of the Trinity River Restoration Program's Channel Rehabilitation Strategy, Phase 1 – Appendix G: Changes to the channel rehabilitation project design process during phase 1.
- Sinnen W, Borok S, Cannata S, Hill A, Hileman J, Kier MC. 2013. Final annual report, Trinity River basin salmon and steelhead monitoring project, 2010-11 season. California Department of Fish and Game, Northern Region, Redding, CA.
<http://odp.trrp.net/Data/Documents/Details.aspx?document=2120>.
- Stalnaker, C and Wittler, R J. 2000. Implementation Plan for the Preferred Alternative of the Trinity River mainstem fishery restoration program EIS/EIR (Appendix C).
- SWRCB. 1990. State Water Resources Control Board Order: WR 90-5.
- Trinity River Restoration Program. Draft 2014. Annual Report. Trinity River Restoration Program, Weaverville, CA. in process.
- U.S. Bureau of Reclamation. 2004. Cultural Resources Inventory for Hocker Flat Project Area. Bureau of Reclamation.
- U.S. Department of Agriculture and U.S. Department of Interior. 1994. Record of decision for amendments to forest service and Bureau of land management planning documents within the range of the northern spotted owl – standard and guidelines for management of habitat for late-successional and old-growth forest related species within the range of the northern spotted owl.
- U.S. Fish and Wildlife Service, U.S. Bureau of Reclamation, Hoopa Valley Tribe, and Trinity County. 2000. Trinity River mainstem fishery restoration final environmental impact statement. October 2000.
- U.S. Department of Interior (USDI). 2000. Record of decision, Trinity River mainstem fishery restoration final environmental impact statement. Decision by the U.S. Department of Interior, December 2000.
- USFWS and Hoopa Valley Tribe. 1999. Trinity River flow evaluation final report. U.S. Fish and Wildlife Service, Arcata, CA and Hoopa Valley Tribe, Hoopa, CA. Report to the US Fish and Wildlife Service. <http://odp.trrp.net/Data/Documents/Details.aspx?document=226>.
- USFWS (U.S. Fish and Wildlife Service) 1980. Environmental Impact Statement on the Management of River Flows to Mitigate the Loss of the Anadromous Fishery of the Trinity River, California. U.S. Fish and Wildlife Service, Division of Ecological Services. Sacramento, CA.